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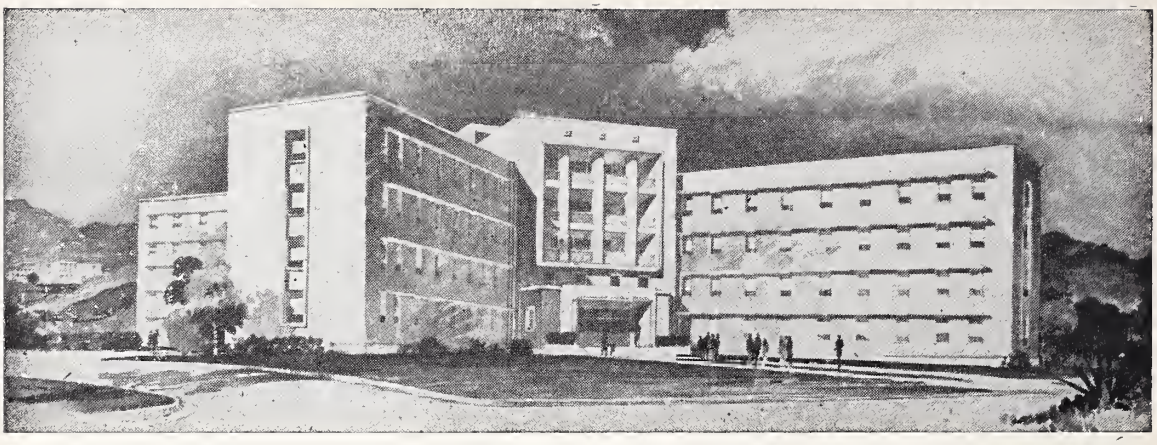

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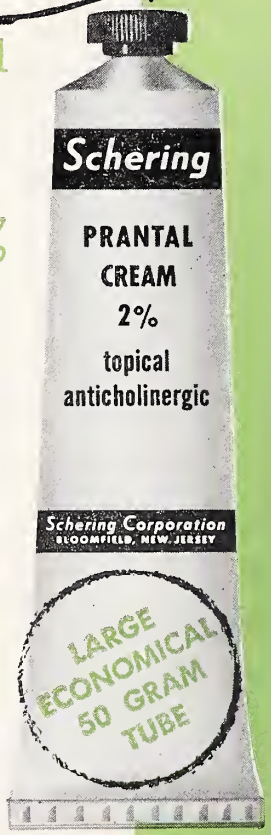

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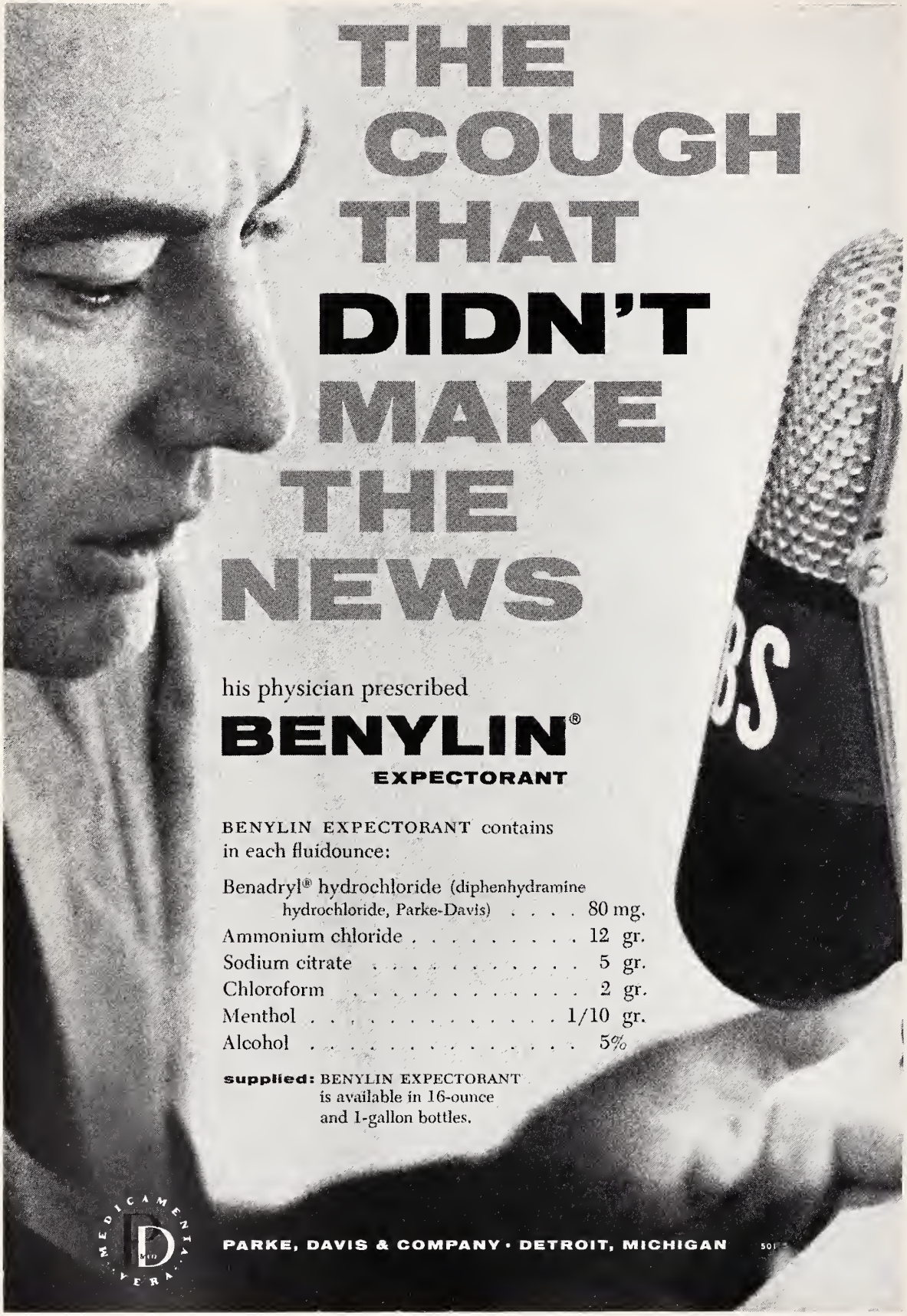
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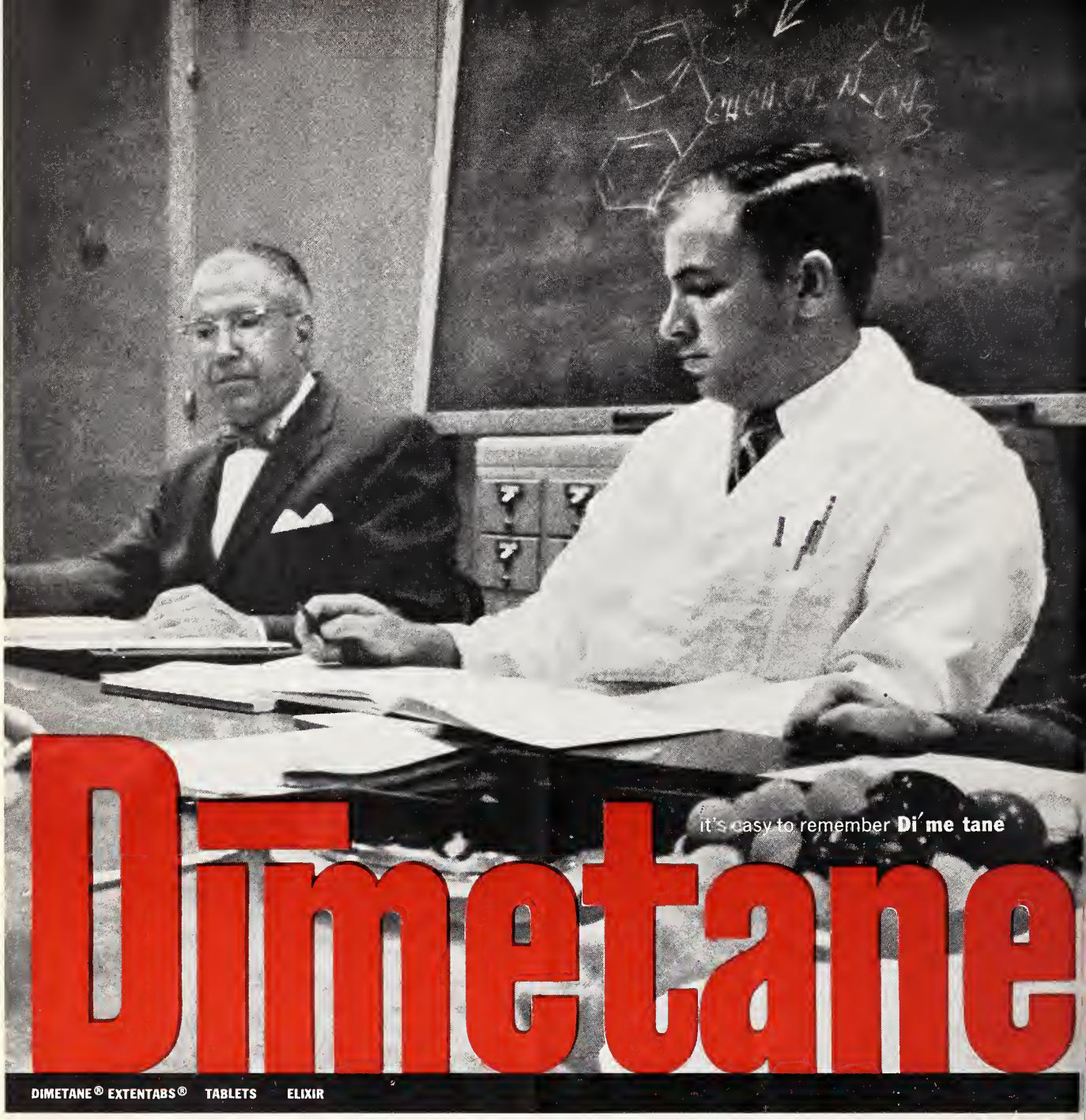

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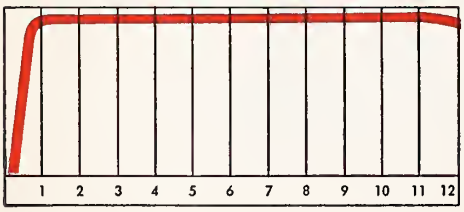

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why wine in geriatrics and convalescence?

Convalescents, regardless of their years, share many of the tonic and recuperative needs of the aged, and wine is probably more widely recommended in the care of these patient groups than in any other.

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Southwestern MEDICINE

VOL. XXXVIII JANUARY, 1957 No. 1

EDITORIAL

Inventory Time

By Robert B. Homan, Jr., M. D., El Paso

At this time, the end of an old and the beginning of a new year, it is customary to "take stock" — to review the events of the past and to make plans for the future. Some go so far as to make "resolutions" — what they will or will not do next year. It might benefit the profession if all of us would do a little reviewing and planning on our own part.

The past year has seen a continued phenomenal growth of voluntary health insurance, the advent of Medicare, extreme changes in the social security system — including the controversial disability program, continued battling over hospital-physician relations, a turmoil at the higher levels over a new code of medical ethics, etc. We find government more and more dominating the practice of medicine. A new congress this month will undoubtedly come forth with other bills designed "to give more adequate medical care to all of the people" — to quote the social planners. Most certainly government "re- insurance" of private insurance companies will again be an issue in Congress and will have administration backing. Compulsory social security for physicians will also be a "must" for the do-gooders.

Cautious Look

Before we become too involved in these matters, perhaps a cautious look at ourselves is not out of order. In his presidential address to the North Central Medical Conference, Dr. P. H. Woutat, of North Dakota, presented his version of "the 1956 requirements" of the so-called ideal physician. They will do for 1957, also.

"The ideal physician must, of course, be of fine and scholarly appearance, with great intellectual capacity, of faultless personal habits, and inspire the confidence of his patients and the respect of all others.

"He must be active in community affairs, taking his full part in Chamber of Commerce and service club functions, serve on and advise municipal and other governmental bodies as called upon, be active in local and state political affairs, be a good church worker and attend church frequently.

"He must be available on short notice for papers to local PTA and church groups, service and business girl's clubs, and all other groups and organizations interested in obtaining reliable information on medical subjects. He must, of course, take an active part in the various youth programs of the community.

Cheerful Contributor

"He must work on and contribute liberally and cheerfully to fund raising campaigns for new hospitals, YM and YWCAs, old peoples homes and nursing homes, give liberal support to the church and the community chest and help defray the deficit of the local ball club.

"He must be active in his local and state medical societies, attend meetings regularly, and accept officership and committee assignments eagerly and perform his duties quickly and with great tact and diplomacy.

"He must be faithful in attendance at hospital staff meetings, be ready to give carefully prepared scientific papers, serve on hospital committees cheerfully and efficiently, keep his hospital records complete in all details, and be prompt with carefully prepared lectures to the student nurses.

"He must be a good family man with a gracious and tactful wife who abhors mink coats and other vulgar extravagancies, and must spend lots of time at home with his children.

Tireless Worker

"But above all this, he must never fail to give his patients the finest possible medical service, keeping abreast of medical progress by reading, attendance at medical meetings, and taking frequent post-graduate courses. He must be a tireless worker and improve his public relations by spending adequate time with his patients, answering urgent calls promptly, day or night, and by not keeping his patients waiting. This must all most certainly be done for what has been vaguely defined as a reasonable fee."

On this basis, doctor, how is your inventory?

Surveys reveal that an American loves his *own* doctor, believes him ethical, honest, competent medically and surgically, and believes him to be a good citizen in his community. On the other hand, the same surveys reveal that Americans do not have the same faith in the medical profession as a whole. Could this be so because too few doctors approach Dr. Woutat's "ideal"? Or could it be because of bickering among ourselves? Or could it be the result of the planned campaign of the socializers to discredit the profession. Now is the time to "take stock."

(1) As quoted by George F. Lull, M. D. — Secretary's Letter AMA — Chicago Letter No. 383 — Nov. 23, 1956.

CURRENT THERAPY

Clinical Use of Radioactive Cobalt ^{60}

By Robert F. Boverie, M. D., Gordon L. Black, M. D., and Ralph S. Clayton, M. D., El Paso*

Treatment of patients with cancer by radiation methods developed rapidly after the discovery of X-rays. But, because of the weakness of the X-ray beams produced by the early X-ray machines, only lesions of the skin could be effectively treated. The treatment of deeper lesions was made possible after the discovery of radium and the development of more powerful X-ray generators.

From the nuclear reactors, developed during World War II, have come several medically important radioactive isotopes in large quantities. Some of these give up their radiation over short periods and can therefore be safely introduced into the general body circulation. For example, Radioactive Iodine (I^{131}) may be taken by mouth, and is concentrated in the thyroid gland providing a convenient, practical method of treating hyperthyroidism and the metastases of cancer of the thyroid if the metastases will concentrate iodine.

Radioactive phosphorus (P^{32}) is a useful source of radiation for treatment of some cases of polycythemia rubra vera, leukemia and metastases of certain types of cancer. This is made feasible because of the increased utilization of phosphorus by rapidly growing tissues.

Radioactive Gold

Radioactive gold (AU^{198}) in a colloidal suspension may be injected into the pleural or peritoneal cavities to reduce the rapid accumulation of effusions due to malignant implants on pleural or peritoneal surfaces.

In addition to these radioactive isotopes which can be left in the body, there are radioactive isotopes which can only be used by placing them in body cavities or solid structures of the body for a predetermined time and then removing them. Radioactive cobalt (Co^{60}) has been used widely in this manner as interstitial needles for implanting malignancies, especially of the mouth, tongue, bladder, and metastases to lymph nodes in the neck. It has also proven useful in capsules in treatment of cancer of the endometrium pre-operatively, and as the primary treatment of cancer of the cervix uteri.

Radium sources have been used successfully with these methods in the past, but because Co^{60} is less expensive, sufficient sources of various strengths and sizes can be purchased more economically, thus providing greater flexibility in clinical use.

*Drs. Boverie, Black and Clayton this month are substituting for Dr. Jack A. Bernard, regular conductor of this section.

Beam Therapy

Another way of treating tumors is by "beam therapy," sometimes called teletherapy. This amounts to exposing a tumor to a beam of irradiation produced at some distance from the patient. Since large amounts of radioactive cobalt are now available from the nuclear reactors, Co^{60} can be obtained in sufficient quantity to provide intense beams of radiation. The principles involved are no different from those used for many years with conventional X-ray therapy.

The primary objective in treatment of a tumor by radiation therapy is to deliver a predetermined number of roentgens to the tumor. By careful planning, this can be done with conventional deep X-ray therapy by the use of multiple fields of treatment from several different angles. A second equally important objective in treatment with irradiation is to treat as little normal tissue as possible. It is in this regard that treatment by radioactive cobalt beam therapy provides advantages, as compared to treatment by conventional deep X-ray equipment.

The maximum dose of radiation occurs below the skin when radioactive Cobalt is used. This allows large doses of radiation to be given to deeply situated tumors without producing troublesome skin reactions. Further sparing of the skin is achieved if rotational, pendulum or multiple field therapy is used.

Radiation Dose

The dose of radiation is considerably greater at a particular depth with radioactive cobalt beam therapy, which means that the total amount of irradiation given the patient can be decreased. Thus again, less irradiation is given to normal tissues. Since there is a decrease in the total absorption of irradiation, there are fewer patients who have undesirable constitutional effects, i.e., nausea, vomiting, and leukopenia.

Another difference is that with radioactive cobalt therapy, there is less absorption by bone and cartilage, as compared to conventional deep X-ray therapy. This primarily will reduce the risk of necrosis of bone and cartilage located near a tumor, but will also allow a greater amount of radiation to reach the tumor when it is situated beneath bony structures.

It has been possible in the past, with conventional deep X-ray therapy, to treat the great majority of patients without having to hospitalize them. Because of the decrease in undesirable side reactions in patients treated with Co^{60}, there is a still greater re-

(Continued on Page 59)

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

(continued)

38. "It is now scarcely possible for a man to acquire slowly the sort of wisdom which in former times caused 'elders' to be respected, because the lessons of experience become out of date as fast as they are learnt. Science, while it has enormously accelerated outward change, has not yet found any way of hastening psychological change, especially where the unconscious and subconscious are concerned. Few men's unconscious feels at home except in conditions very similar to those which prevailed when they were children." Bertrand Russell; *loc. cit.*, P. 1310.

39. "I have seen meningitis develop at all stages between one day and 10 days after fractures of the anterior fossa involving the paranasal sinuses, with tearing of the overlying dura. Thus no one with an unclosed dural tear over a fractured ethmoid or frontal sinus can be regarded as safe from this risk. The meningitis, usually pneumococcal, may follow a cold in the head, but often it comes when the sinuses are not infected." Sir Hugh Cairns; *British Medical Journal;* June 4, 1949; P. 973.

40. "If leakage of large volumes of air persists after intrapleural suction has been instituted in a patient with a severe thoracic injury, the diagnosis of a ruptured bronchus must be strongly suspected." F. Henry Ellis, Jr., *Staff Meetings of Mayo Clinic;* June 29, 1955; P. 274.

Blood Supply

41. "There should be no concern regarding the blood supply to the distal end of a divided bronchus in spite of the fact that the bronchial arteries are severed by such an injury. It is extremely difficult to deprive the bronchi of the systemic arterial supply because of the numerous collateral vessels that exist." F. H. Ellis, Jr., *loc. cit.*, P. 275

42. "The mediastinal spaces are in constant motion from the surrounding vessels and moving pleura, rendering the presence of infection especially hazardous." F. H. Ellis, Jr., *loc. cit.*, P. 293.

43. "The absence of joint manifestations, skin manifestations and confirmatory laboratory evidence, i. e., a normal sedimentation rate and a normal antistreptolysin titre does not deny the presence of rheumatic carditis in our experience. It is more accurate to state that those manifestations which are considered classical for rheumatic fever when present at the early stage of the disease may yet disappear while protracted rheumatic carditis continues." Sister Mary Yassunta, *Bulletin of the St. Francis Hosp. & Sanatorium;* January 1954, P. 42.

44. "Morphine is relatively ineffective when given by mouth; the analgesia from gr. 1/6 orally is less than that from gr. 10 of aspirin." "Leading Articles"; *The Lancet;* July 2, 1955; P. 26.

45. "Oliver Cromwell's advice to his zealots: 'Gentlemen, I beseech you by the bowels of Christ to remember for just one moment that you may be wrong.'" Quoted by Alan Gregg; *Texas Reports on Biology and Medicine;* Vol. II; 1953; P. 444.

Besetting Sins

46. "Since doctors so often live by patients' confidence, and confidence is the natural child of prestige, the besetting sins of many a doctor become prestige hunting, professional jealousy, and nursing self-pity. Watch out for these, keeping in mind the mellow Chinese proverb that observes 'Great men never feel great: small men never feel small.'" Alan Gregg; *Tex. Reports on Biol. & Med.;* Vol. II; 1953; P. 445.

47. "At the bedside of disease, patients do not want and do not need to be attended by mere Quiz Kids — persons as miraculous mentally as they are immature in every other way. That is what I mean when I say there are plenty of M. D.'s in this world but not enough real doctors. In the effort to take the world as a real place and not evade its reality you may on occasion find wisdom in the art of timing, in taking advantage of the fact that life ebbs and flows, that the work of the world, like the work of the heart goes on by means of diastole as well as systole." Gregg; *loc. cit.*, P. 445.

48. "Never underestimate your need for the company and the companionship of men who want to learn. And above all have the grace to admit that you can learn. Charles Darwin once observed that in his experience men differed more in the degree to which they used their abilities than in the sum total of their abilities." Gregg; *loc. cit.*, P. 446.

49. "When anxiety is very severe it overflows into the muscular system, with the production of gross motor restlessness, and it is then termed 'agitation.' Agitation is always a symptom of an illness of a serious kind, and most patients referred urgently with a diagnosis of 'acute anxiety state' are in fact suffering from a depression. Self-reproach and hopelessness about the future will usually be in evidence." Gerald Garmany; *British Medical Journal;* July 9, 1955; P. 115.

Hysterical Blindness

50. "Hysterical blindness shows the triad of a

sudden onset, normal fundi, and normal pupillary reactions. Hysterical aphonia soon gives way to whispering, which is more convenient for the patient, and it may be observed to be selective and pitched so that it causes maximum irritation while permitting social or therapeutic exchanges." Gerald Garmany; *loc. cit.,* P. 116.

51. "Stupor is found, when it is found at all, in chronic and practised hysterics, and it can cause anxiety from the diagnostic point of view to the most experienced observer. The patient may lie flaccid and as if in coma, with a total absence of psychologically understandable responses to stimuli as the usual definition of coma requires. It is called stupor rather than coma, because there is good evidence — usually retrospective — that awareness has not been suspended. Nevertheless the dissociation of function is so well established that there may be no response to pinches, sharp needles, or any other stimulus which it would be acceptable to apply. There is one common but not invariable sign which should be looked for since it gives the diagnosis, and that is a slight rapid fluttering of the eyelids." Gerald Garmany; *loc. cit.,* P. 117.

52. "Rupture of the small intestine rarely causes free air beneath the diaphragm, especially if the perforation is due to acute trauma. Of 19 cases of rupture from nonpenetrating abdominal injuries reported by Jacobson and Carter only two showed pneumoperitoneum. Many patients had no x-ray signs of injury despite gross perforation and peritonitis." John E. Gary & Richard Schatzki; *New England Journal of Medicine;* Dec. 30, 1954; P. 1097.

"POINTERS"

From the Case Records of the Massachusetts General Hospital 1952*

(continued)

13. "Massive peripheral thrombosis without any peripheral edema is possible." A composite; *loc. cit.;* p. 749

14. "I think it was well stated recently that 'the steroid hormones have the ability to mask all signs except those of death.'" *loc. cit.;* p. 789

15. "Although temporary benefits may occur, relatively few of these (chronic cardiac) patients can be brought back into balance for any appreciable length of time by juggling their electrolytes. It is a somewhat discouraging situation to deal with from a practical angle." *loc. cit.;* p. 908

16. "We are all aware that it is difficult to be certain of expansile pulsation. Even the conventional test that we teach the second-year students of placing the hands on the sides of the pulsating mass and watching for them to be separated is not always accurate. When a rounded tumor or a mass of any shape lying on the aorta is pushed anteriorly, the dome of the tumor impinging on the hands gives an expansile character to the pulsation." *loc. cit.;* p. 944

17. "We must consider three possible causes for the appearance of a loud apical systolic murmur after cardiac infarction: (1) rupture of the septum, (2) rupture of a papillary muscle, and (3) mitral regurgitation associated with increasing dilatation of the heart terminally." A composite. *loc. cit.;* p. 832

Pulmonary Emboli

18. "Small pulmonary emboli may be released for years from an occult thrombophlebitis of the legs and ultimately cause fatal cor pulmonale. The history may be quite obscure and not rouse suspicion of embolization." A composite; *loc. cit.;* p. 67 N. E. J. of Med.; July 3, 1952

19. "Dr. Bland and I have several such cases most of which had been called Ayerza's disease but which are really due to emboli, not thrombi or endarteritis. In their experimental work Muirhead, in Texas, and Wartman, in Chicago, have also shown that emboli can produce the picture of arteriosclerosis in the pulmonary vessels." *loc. cit.;* p. 68

20. "I think the great variance of the percentage of patients with myeloma who have or not have Bence-Jones protein is correlated directly with the industry of the persons assigned to look for the Bence-Jones protein. I do not say that Bence-Jones protein occurs in all patients, but I do think it will be found in a high percentage of patients if adequately looked for." *loc. cit.;* p. 71

21. "A form of pyelonephritis, the so-called necrotizing papillitis. This type of renal disease is seen most often in diabetic persons, but in about a third of the cases it occurs in patients without diabetes; in these cases it is almost always associated with an obstruction of the urinary tract . . . Patients with necrotizing papillitis develop it very rapidly, have high white-cell counts, often have high fevers and usually die within a month." *loc. cit.;* p. 104

Raynaud's Phenomena

22. "Raynaud's phenomena may be a preliminary of any kind of disease compressing or constructing the arteries like scleroderma or dermatomyositis . . . a number of times I, and other surgeons, have done sympathectomies on persons who appeared to have Raynaud's disease only to find that they progressed to scleroderma. Under these circumstances operation has either made the condition worse or produced no improvement." *loc. cit.;* p. 137

(To Be Continued)

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. — Andrew M. Babey, M. D.

Index To Dr. Andrew M. Babey's Aphorisms

Because of the widespread interest in Dr. Babey's Collections of Aphorisms and Memorabilia, the editors of SOUTHWESTERN MEDICINE are presenting below the first of a series of annual indexes of the Aphorisms.

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MEETINGS

Dr. Jesse A. Rust of San Diego Elected President of Southwest Obstetrical and Gynecological Society

Dr. Jesse A. Rust of San Diego was elected president of the Southwest Obstetrical and Gynecological Society at its sixth annual meeting in Tucson, Arizona, November 12 and 13, a gathering unique for its setting in the landscaped Arizona Inn, excellent attendance, quality of speakers, and spontaneity of its sessions.

Guest speakers were Dr. Bayard Carter, Professor of Obstetrics and Gynecology at Duke University, Dr. Franklin L. Payne, Professor of Obstetrics and Gynecology at the University of Pennsylvania, Dr. Ralph A. Reis, Professor of Obstetrics and Gynecology at Northwestern University, and Dr. E. Stewart Taylor, Professor of Obstetrics and Gynecology at the University of Colorado.

Members enjoyed thoroughly the Inn with its Spanish style architecture, beautifully landscaped grounds and swimming pool. Weather was sunny and warm in the Tucson area, which boasts sunshine 336 days a year and an invigorating climate at its altitude of 2400 feet.

Dr. Jesse A. Rust

Other new officers were Dr. Charles E. Van Epps, Phoenix, president-elect; Dr. Robert P. O'Donnell, Las Vegas, Nevada, vice-president; and Drs. Zeph B. Campbell and Raymond J. Jennett, both of Phoenix, who were re-elected secretary and treasurer respectively.

Las Vegas, Nevada, was selected as the convention site for 1957 and Phoenix for 1958.

It was announced that the District VIII meeting of the American College of Obstetrics and Gynecology will be held May 27 and 28 in the Riverside Hotel in Reno, Nevada.

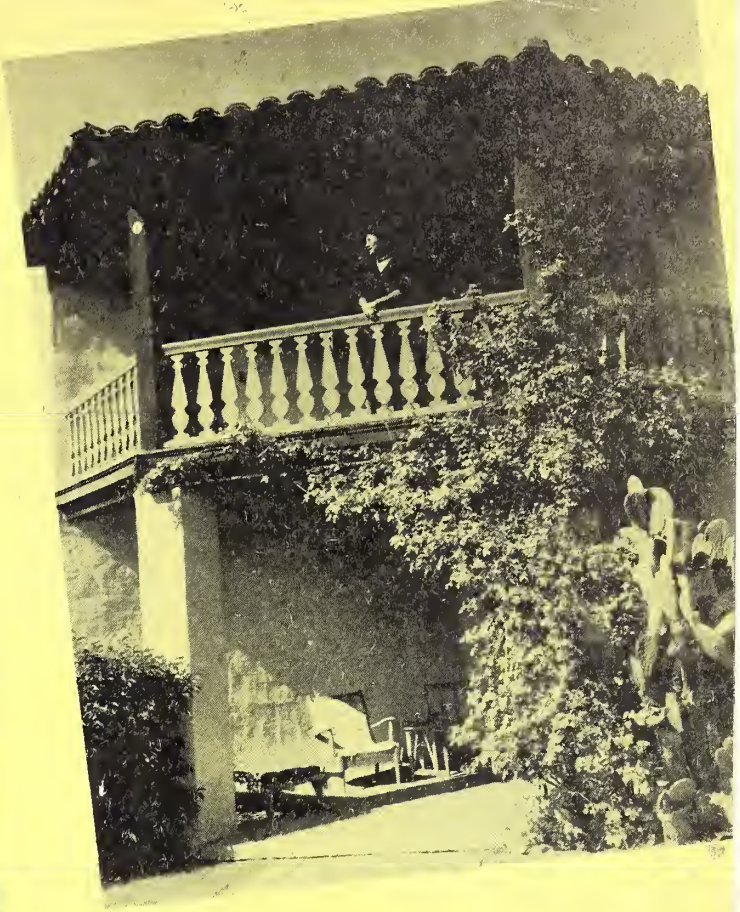
Elected to the Society's Council Group A were Dr. LaVern D. Sprague, Tucson, Dr. James R. Phalen, San Diego, Dr. G. Calvin Williamson, Yuma, Arizona, Dr. Jesson L. Stowe, El Paso, and Dr. Raymond L. Young, Santa Fe, New Mexico. There were no changes in Council Group B.

Dr. Rust was born in Burlington, Vermont, educated in Burlington schools and was graduated from the University of Vermont School of Medicine in 1936. He interned in Vassar Hospital in Poughkeepsie, New York, and held a teaching fellowship for three years at the University of Vermont School of Medicine. He took his residency in Boston City Hospital.

Dr. Rust served with the Army Medical Corps for four years during World War II, with two years in the South Pacific, emerging with the rank of major. He began the practice of medicine in San Diego in 1946. He is certified by the American Board of Obstetrics and Gynecology, is a member of the American College of Obstetrics and Gynecology, is a past president of the San Diego Gynecological Society and was one of the founders of the Southwest Obstetrical and Gynecological Society, serving as the Society's first secretary for three years.

Dr. and Mrs. Rust have three sons, ages six, seven and fifteen.

Dr. Charles J. Newcomb of Tucson was master of ceremonies at a banquet held at close of the meeting, at which officers and guest speakers spoke informally. Dr. Hollis H. Brainard of Tucson was the retiring president of the Society.



Sixth Annual Meeting

SOUTHWEST OBSTETRICAL AND GYNECOLOGICAL SOCIETY

Arizona Inn, Tucson, November 12 and 13

Dr. and Mrs. Ralph A. Reis and four-year-old granddaughter, Joan Pomranc. Dr. Reis, Professor of Obstetrics and Gynecology at Northwestern University, was one of the speakers.

Left to right are Bayard Carter, Pro sor of Obstetrics Gynecology at Duke versity and one of speakers, Dr. Geo Hart, Albuquerque, Dr. Joe Bonnet, Phoe

Left to right are Dr. Hollis H. Brainard, Tucson, retiring President of the Association, Mrs. E. Stewart Taylor, Dr. James R. Phalen, San Diego, Dr. E. Stewart Taylor, Professor of Obstetrics and Gynecology at the University of Colorado and one of the speakers, and Mrs. Brainard.

Dr. Charles E. Van Epps, Phoenix, President-elect, left, and Dr. William G. Payne, Tempe, Arizona.

Dr. Robert P. O'Donnell, Las Vegas, Nevada, new Vice-president, left, and Dr. James S. Shortle, Albuquerque.

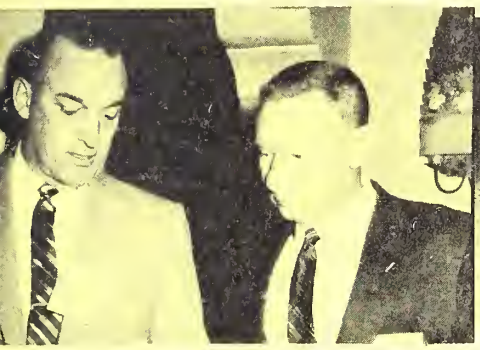
Dr. Zeph B. Campbell, Phoenix, re-elected secretary, left, and Dr. Franklin L. Payne, Professor of Obstetrics and Gynecology at the University of Pennsylvania and one of the speakers.

Left to right at the registration table above are Mrs. G. Arthur Janssen, Tuc Mrs. H. S. Rhu, Jr., Tucson, Mrs. Judy Remes, Tucson, secretary to Dr. Brainard, Gordon Hippert, Tucson, Mrs. R. R. Lacock, Tucson, and Mrs. J. H. McEvers, Tuc
Left to right below are Dr. John Poyas, Laguna Beach, California, Dr. Cels Stapp, El Paso, past president, and Dr. Hollis Paegle, Corona del Mar, Califo

Dr. and Mrs. Rudolph Hack, San Bernardino, California.

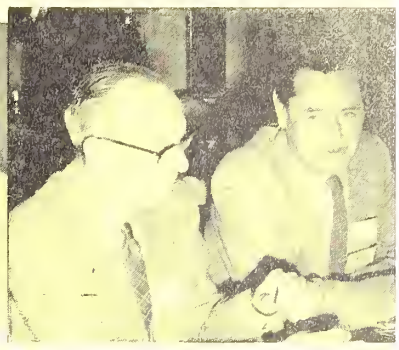
Dr. Harris H. Barber, left, and Dr. Robert P. George, both of Albuquerque.

Left to right, Dr. Charles S. Brooks, El Centro, Calif., Dr. D. Dalton Deeds and Dr. Gilbert S. Hardie, both of San Diego.



Dr. John F. Wanless, left, and Dr. William Buster McGee, a past president, both of San Diego.

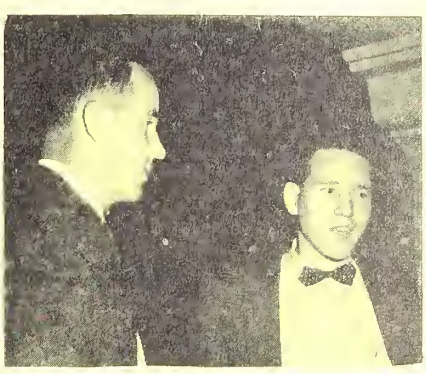
Dr. Gray E. Carpenter, left, and Dr. Harry Demarest, both of El Paso.



Dr. Howard C. James, left, Tucson, and Dr. George H. Derieux, San Diego.

Dr. Raymond J. Jennett, left, Phoenix, re-elected treasurer, and Dr. Donald G. Carlson, Phoenix.

Dr. M. Roy Miranda, left, Fontana, Calif., and Dr. Henry F. Maguire, San Diego.



Dr. J. H. McEvers, left, Tucson, and Dr. Harold Carstensen, Tucson.

Left to right, Dr. Finish Wiggins, Jr., r. Philip M. Savage, and Dr. Ross Bal- rd, all of San Bernardino.

Dr. William E. Sanders, left, Tucson, and Dr. Thomas A. Slate, San Diego.

Dr. J. R. Loughead, left, Davis-Monthan Air Force Base, and Dr. R. R. Lacock, Tucson.

Dr. Glenn H. Mathis, left, and Dr. Max Costin, both of Tucson.

Dr. Robert Jones, left, Phoenix, and Dr. Bernard J. Weinfurtner, Riverside, Calif.

Left to right are Mrs. T. O. Rowley, Mesa, Ariz., Mrs. D. E. Nelson, Safford, Ariz., Mrs. Franklin L. Payne, wife of the guest speaker, and Mrs. Calvin Williamson, Mesa, Ariz.

Left to right are Mrs. William G. Payne, Tempe, Ariz., Mrs. Walter S. Parks, Jr., Midland, Tex., Mrs. F. R. Rabe, Phoenix, Mrs. John A. Jones, Phoenix.

Left to right, Mrs. M. A. Tanny, and Mrs. A. R. Clauser, both of Albuquerque, and Mrs. Celso C. Stapp of El Paso.

Mrs. Gray E. Carpenter, left, El Paso, and Dr. A. R. Clauser, Albuquerque.

Dr. A. C. Rood, left, and Mrs. George Hart, both of Albuquerque.

Mrs. Ross Ballard, left, San Bernardino, Calif., and Miss Dorothy Landreth, also of San Bernardino.

Dr. Robert F. Thompson Elected President of El Paso County Medical Society

Dr. Robert F. Thompson was elected president of the El Paso County Medical Society December 11 at the organization's annual meeting in its Turner Home at 1301 Montana Street.

He succeeds Dr. Newton F. Walker.

Other new officers are Dr. Gerald H. Jordan, president-elect; Dr. Branch Craige, vice-president; Dr. Morton H. Leonard, secretary; Dr. Donald Ewalt, secretary-elect; and Dr. C. M. Stanfill, treasurer.

Dr. Ralph S. Clayton was elected a delegate and will work with delegates elected a year ago, Drs. Merle D. Thomas and Russell L. Deter. Dr. Jack Postlewaite was elected alternate delegate.

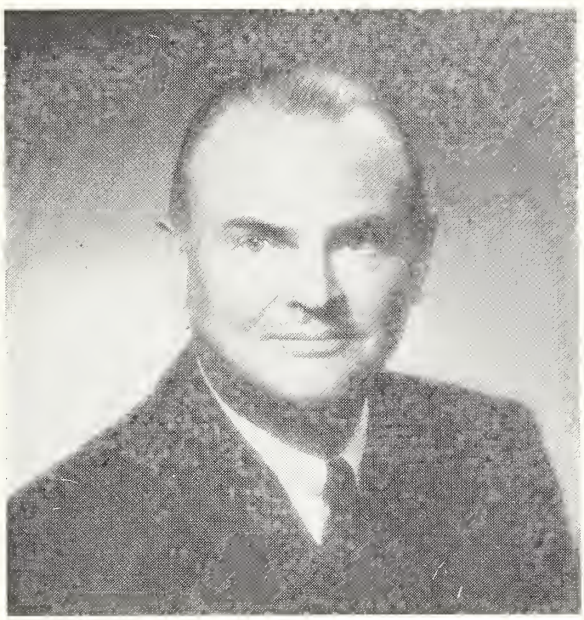
Dr. Thompson was born and reared in Nashville, Tennessee, and attended the Wallace Preparatory School. His liberal arts and pre-medical education was obtained at Vanderbilt University, where he also received his medical degree.

After graduation he remained in Nashville for internship and for post-graduate training, later being associated with Dr. Perry Bromberg, Professor of Urology at the Vanderbilt Medical School. He also served a Surgical Residency at the Newell Hospital, Chattanooga, Tennessee.

Dr. Thompson came to El Paso in 1929 and has been engaged in private practice since that time. He specializes in Urological Surgery.

He is a Fellow of the American College of Surgeons, a member of the American Urological Association and is certified by the American Board of Urology. He is a former chief of staff of Providence Memorial Hospital in El Paso and former chief of the Urological Section at Providence.

Additional professional organizations with which he is affiliated are the American Medical Association, the Southern Medical Association, the Southwestern Medical Association and the Texas State Medical Association.



Dr. Robert F. Thompson

In 1931 Dr. Thompson married the former Virginia Hood of Nocona, Texas. Mrs. Thompson is a past president of the Texas Medical Association Auxiliary. The Thompsons reside at 1227 Rim Road in El Paso. They have a son, Robert F. Thompson, Jr., who is now in the Army, and a daughter, Mrs. William Schoellkopf, Jr., of Los Angeles, California.

Dr. Thompson's hobbies are American History, golf and the collection of antique firearms. His fraternities are Beta Theta Pi and Phi Chi.

The clubs in which he holds membership are the El Paso Country Club, Kiwanis Club and the International Club. He is a member of the First Presbyterian Church.

Dr. Thompson announced plans for continuing the work of the Society's Disaster Committee and furthering all other phases of medical activity in the community in which the Society is engaged.

SURGERY

Penicillin And Streptomycin In The Treatment Of Experimental Escherichia Peritoneal Infection

Bloemers, H. W. & Kempf, J. E., Ann. Surg. 132:235, 1950

Penicillin was less effective than streptomycin in treatment of experimentally produced *E. Coli* peritonitis in mice. An additive, but not synergistic, effect was observed when the two antibiotics were given concurrently.

U. Illinois College Med.

Clinical Clippings, October, 1950.

TUBERCULOSIS

Tuberculosis Patients Two And a Half Years After Streptomycin Treatment

Maxim, M., et al., Am. Rev. Tuberc. 61:868, 1950

Two and one-half years after treatment of 35 tuberculosis patients with streptomycin the disease was found to be arrested in 19, quiescent in 5, and active in 9. Two patients died in the interin.

Montefiore Hosp.

Clinical Clippings, October, 1950.

New Mexico Medical Society to Meet May 15-17 in Santa Fe

The New Mexico Medical Society will hold its annual meeting May 15, 16 and 17 in La Fonda Hotel in Santa Fe. It will be the 75th anniversary meeting of the society.

Dr. Stuart W. Adler of Albuquerque is president of the New Mexico Medical Society.

Other officers are Dr. Samuel R. Ziegler, Espanola, president-elect; Dr. James C. Sedgwick, Las Cruces, vice-president; and Dr. Lewis M. Overton, Albuquerque, secretary-treasurer. Dr. Earl L. Malone of Roswell is immediate past president.

Others holding official positions in the New Mexico Medical Society are:

Councilors (three years): W. E. Badger, Hobbs, 1957; W. D. Dabbs, Clovis, 1957; W. O. Connor, Jr., Albuquerque, 1958; L. L. Daviet, Las Cruces, 1958; Aaron Margulis, Santa Fe, 1959; Junius A. Evans, Las Vegas, 1959.

Delegate to American Medical Association (two years): H. L. January, Albuquerque, 1958; Alternate: Earl L. Malone, Roswell, 1958.

Board of Supervisors: A. J. Jenson, Hobbs, Chairman, 1957; W. J. Hossley, Deming, Secretary, 1957; Milton Floersheim, Jr., Raton, 1957; George W. Prothro, Clovis, 1957; A. D. Maddos, Las Cruces, 1958; G. A. Slusser, Artesia, 1958; Louis Levin, Belen, 1958; Jack Dillahunt, Albuquerque, 1958.

New Mexico Physicians Service: H. M. Mortimer, Las Vegas, 1957; H. L. January, Albuquerque, 1957; Fred Hanold, Albuquerque, 1957; L. L. Daviet, Las Cruces, 1957; O. C. Taylor, Jr., Artesia, 1957; C. S. Stone, Hobbs, 1957; R. P. Beaudette, Raton, 1958; R. V. Seligman, Albuquerque, 1958; Wendell Peacock, Farmington, 1958; Omar Legant, Albuquerque, 1958; Allen Haynes, Clovis, 1959; W. L. Minton, Lovington, 1959; J. P. Turner, Carrizozo, 1959; U. S. Marshall, Roswell, 1959; J. W. Hillsman, Carlsbad, 1959; Executive Director, Mr. L. J. LeGrave, 212 Insurance Building, Albuquerque, Phone 3-3188.

Nominating Committee: Chairman, Robert Friedenberg, Albuquerque; Junius Evans, Las Vegas; Albert S. Lathrop, Santa Fe; John F. Conway, Clovis; C. P. Bunch, Artesia; Leland Evans, Las Cruces.

Convention Committee: Chairman, Earl L. Malone, Roswell; John F. Conway, Clovis; Albert Lathrop, Santa Fe.

Public Relations Committee: Chairman, J. K. Torrens, Albuquerque; A. M. Babey, Las Cruces; Jose Maldonado, Santa Fe; John Martin, Gallup; John McCulloch, Farmington.

Legislative and Public Policy Committee: Chairman, Guy Rader, Albuquerque; W. E. Nissen, Albuquerque; Jose Rivas, Belen; Pierre Salmon, Roswell; V. K. Adams, Raton; Mike de Maio, Clovis; Leland Evans, Las Cruces; Jack Hargan, Carlsbad; R. E. Watts, Silver City; Henry Hodde, Hobbs; C. Lushbaugh, Los Alamos; Paul Feil, Deming; Vincent Accardi, Gallup; Myron Baumgartner, Alamogordo; A. T. Gordon, Tucumcari; Wendell Peacock, Farmington; J. J. Johnson, Jr., Las Vegas; Bergere Kenney, Santa Fe; John Scott, Truth or Consequences; Albert Rosen, Taos.

Advisory Committee to State Department of Public Welfare: Chairman, J. L. McCrory, Santa Fe; Eleanor Adler, Albuquerque; Aaron E. Margulis, Santa Fe; John S. Moore, Roswell; L. J. Whitaker, Deming.

Advisory Committee to State Health Department: Chairman, W. L. Minear, Albuquerque; Roy Goddard, Albuquerque; Allan Haynes, Clovis; Marcus Smith, Santa Fe; Owen C. Taylor, Artesia.

Professional Insurance Committee: Chairman, Omar Legant, Albuquerque; John Abrums, Albuquerque; Clay Gwinn, Carlsbad.

Advisory Committee to Selective Service: H. L. January, Chairman, Albuquerque; C. P. Bunch, Artesia; Raymond Young, Santa Fe.

American Medical Education Foundation: David Clark, Chairman, Albuquerque.

Rocky Mountain Medical Conference: H. L. January, Chairman, Albuquerque; Allen Service, Roswell; Victor Berchtold, Santa Fe; C. Lee Harris, Las Cruces; Charles Beeson, Albuquerque.

Governor's Committee for the Physically Handicapped: J. T. McGuckin, Chairman, Albuquerque; H. W. Gillett, Lovington; Edward Parnall, Albuquerque; Lucy G. McMurray, Albuquerque.

Infancy and Maternal Mortality Committee: Alton R. Pruitt, Chairman, Roswell; Sophie Aberle, Albuquerque; Alvina Looram, Santa Fe; Martha Howe, Rancho de Taos; R. H. Pousma, Gallup; R. V. Seligman, Albuquerque; L. F. Kuehn, Albuquerque; Jack Hargan, Carlsbad; V. K. Adams, Raton; A. S. Blauw, Roswell.

Liaison Committee to the New Mexico Hospital Association: Lewis M. Overton, Chairman, Albuquerque; Dan Cahoon, Roswell; Philip Shultz, Santa Fe.

Rural Health Committee: E. K. Bryan, Chairman, Park View; Sarah Bowen, Embudo; E. D. Fikany, Fort Sumner; Bram Vanderstok, Ruidoso; W. F. Wittwer, Los Lunas.

Mental Health Committee: W. T. Brown, Chairman, Albuquerque; E. A. Latimer, Roswell; M. H. Halvorsen, Albuquerque; Elsa Brumlop, Santa Fe.

Accident Prevention Committee: E. W. Lander, Chairman, Roswell; John Boyd, Albuquerque; J. N. Dudley, Albuquerque; Mariam Hotopp, Santa Fe; Oscar Syme, Albuquerque.

Advisory Committee — Voluntary Health Agencies: R. R. Boice, Chairman, Roswell; O. S. Cramer, Albuquerque; R. P. Crame, Portales; Homer Musgrave, Albuquerque; Garth Blakely, Springer.

Liaison Committee to the Woman's Auxiliary: C. M. Thompson, Chairman, Albuquerque.

Civil Defense Committee; Jack C. Redman, Chairman, Albuquerque; Fred G. Hirsch, Albuquerque; H. R. Landmann, Santa Fe; W. R. Lovelace, II, Albuquerque; R. R. Robertson, Albuquerque.

Advisory Committee — Rehabilitation Center: Eugene Szerlip, Chairman, Albuquerque; R. D. McClure, Albuquerque; Charles R. Beeson, Albuquerque.

Advisory Committee — University of New Mexico Medical School: Lorry C. Delambre, Chairman, Albuquerque; Lewis M. Overton, Albuquerque; Raymond L. Young, Santa Fe; Thomas L. Shipman, Los Alamos; Lawrence H. Wilkinson, Albuquerque; Richard H. Pousma, Gallup.

Southwestern N. M. Meet Scheduled for January 9

Dr. George M. Schlenker of El Paso will be the principal speaker at the regular meeting of the Southwestern New Mexico Medical Society meeting in Deming, New Mexico, January 9, 1957.

Dr. Schlenker will speak on "The Uses and Abuses of Tranquilizers." Dr. C. Lee Harris of Las Cruces, who is president of the Dona Ana County Medical Society, is in charge of the program.

The meeting will start at 6:15 p. m., with dinner at 7 p. m. in the Rio Mimbres Country Club.

A special invitation is being extended to physicians in the rapidly growing Alamogordo, N. M. area.

Officers of the Society are Dr. W. J. Hossley, Jr., Deming, president; Dr. C. C. Cobb, Silver City, N. M., vice-president; and Dr. Sidney F. Baker, Silver City, secretary-treasurer.

Dr. Basom of El Paso Named Chairman of Fracture Meeting

Dr. W. Compere Basom, El Paso orthopaedist, was elected to the American Fracture Association board of governors during the organization's 17th annual meeting in Chicago.

El Paso was chosen as the site of the 1957 convention. Dr. Basom will be chairman of the convention and program, which will be held in Hotel Cortez, Sept. 30 - Oct. 3.

Dr. Basom, who has practiced in El Paso since 1941, is an orthopaedic consultant for William Beaumont Army Hospital and a former chief of staff of Hotel Dieu Sisters Hospital.

5,000 Family Physicians to Attend March 25-28 Meeting in St. Louis

More than 5,000 of the nation's family physicians will attend the Ninth Annual American Academy of General Practice Scientific Assembly, March 25-28, 1957, in Kiel Auditorium, St. Louis.

The record-shattering attendance was predicted by Mac F. Cahal, the Academy's executive secretary and general counsel. Each of the past four meetings has successively established a new attendance record.

During the four-day scientific meeting, the doctors will hear outstanding speakers discuss important subjects including infertility, polio vaccination, and the "neglected" pediatric areas, the eyes, ears, and feet. They will visit 60 scientific and 260 technical exhibits.

Dr. I. S. Ravdin, professor of surgery at the University of Pennsylvania, will moderate a panel discussion of pre- and post-operative care. Dr. Philip Thorek, associate professor of surgery at the University of Illinois and professor of surgery at Cook County Graduate School will discuss "Intestinal Obstruction." Three other surgeons will highlight advances in vascular, thoracic, and neurosurgery.

One afternoon will be devoted to a review of procedures that assure birth of "healthy babies" from "well mothers." This subject is important to family physicians who currently deliver 85 per cent of the nation's children.

Postgraduate Conference

The Temple Division of the University of Texas Postgraduate School of Medicine offers the fifth Scott, Sherwood and Brindley Foundation postgraduate conference in medicine and surgery on March 4, 5, 6. For detailed information write: Director, Scott, Sherwood and Brindley Foundation, Scott and White Clinic, Temple, Texas.

THE PRESIDENT'S COLUMN

Southwestern Medical Association Meeting in October Now Being Lined Up

By Celso C. Stapp, M. D., El Paso

Plans for the 1957 meeting of the Southwestern Medical Association are well under way. The meeting will be held at the Hotel Paso Del Norte in El Paso on October 9, 10, and 11, 1957. The program will be quite varied and there will be at least seven speakers. Several of the speakers have already accepted invitations. There are only two who have not been heard from.

When all are on the line the full list will be published. As during the last time the meeting was held in El Paso we are hoping to have the first day of the meeting devoted to sectional meetings. A new feature contemplated is to have medical films shown all day the first day. Round table luncheons will also be held daily with a chance for everyone present to ask questions.

A full social and athletic program is also being planned with a variety of entertainment for the ladies. For those wishing to stay over for Saturday October 12, 1957 there will be a Texas Western College football game and on Sunday October 13 there will be a bull fight in Juarez.

Committees Named

The Convention Committee will have as General Chairman Dr. Merle D. Thomas. Other members of the Committee will be Dr. Newton F. Walker representing the El Paso County Medical Society, Dr. Maynard Hart program chairman, Dr. Gordon Black finance, Dr. Willard W. Schuessler social program, Dr. E. S. Crossett exhibits, Dr. H. D. Garrett hotel arrangements, Dr. W. R. Gaddis properties and General Practice representative, Dr. Jack Bernard tournaments, Dr. Louis Breck transportation, and Dr. Russell L. Deter secretary. Mrs. H. D. Garrett, president of the El Paso County Medical Auxiliary and Mrs. W. W. Schuessler will be in charge of the ladies entertainment.

We of El Paso, your hosts, do hope that you will mark your calendar now and make a New Years Resolution, not to be broken, that you will be in El Paso for the Meeting of the Southwestern Medical Association on October 9, 10, and 11, 1957. This will give you time to have recovered from Christmas and the New Year.

Coming Meetings

Southwestern New Mexico Medical Society, Deming, N. M., Jan. 9.

District One, Texas Medical Association, Pecos, Texas, Feb. 12.

Temple Div., Univ. of Texas, Temple, Texas, March 4, 5, 6.

American Academy of General Practice Scientific Assembly, March 25-28, 1957, in Kiel Auditorium, St. Louis.

New Mexico Medical Society, May 15, 16, 17, 1957, in La Fonda Hotel, Santa Fe.

District 8, American College of Obstetrics and Gynecology, Reno, Nevada, May 27 & 28.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, 1957, in El Paso.

Brief on Ulcers

Ant, M.: New Medical Treatment for Peptic Ulcers, including a review of medical literature, New York Physician & American Medicine, vol. 47, (Nov.) 1956.

An analysis of 195 case histories of gastric or duodenal ulcer treated with Rabro tablets for three to twelve weeks showed clinical benefit in 179 cases (92 per cent) and X-ray improvement in 160 of 186 roentgenologically studied cases (86 per cent). The results in ambulatory cases were almost as satisfactory as for bed patients. The advantages of this treatment were prompt relief of the symptoms in less than a week, relief of spasm as well as of gastric hyperacidity, and roentgenological healing of the ulcer niches in most cases. Rabro tablets contain glycyrrhiza extract of standardized glycyrrhizin content compounded with light magnesium carbonate, bismuth subnitrate and sodium bicarbonate as antacids, plus small amounts of frangula and calamus to offset the constipating effects of bismuth. Apparently glycyrrhiza relieves gastroduodenal spasm and thereby contributes to the natural healing of gastric and duodenal ulcers. The foreign literature on use of Rabro tablets in peptic ulcer is reviewed.

Medical and Hospital Disaster Plan Adopted By El Paso Medical Society

A complete plan for medical and hospital action in event of a disaster was announced in early December by Dr. Newton F. Walker, immediate past president of the El Paso County Medical Society.

The plan has been approved by the Medical Society, local hospitals and has been worked out in conjunction with Mayor Tom Rogers of El Paso and County Judge Hugh McGovern of El Paso, who have sanctioned the plan.

Heading the medical society's disaster committee are Dr. Bloyce H. Britton, chief, and Dr. Branch Craige, deputy chief.

The plan is flexible to provide for a major disaster involving over 100 persons or a minor disaster involving between 50 and 100 persons. It is the result of several months of work by local doctors.

It will be a blueprint for emergency operations involving a disaster in the El Paso area and will be made available to Juarez, Mexico, just across the Rio Grande, if assistance is requested.

Procedure Explained

The emergency procedure is as follows:

Police and sheriff's deputies go to the scene of the accident. Dr. W. W. Schuessler is in charge of liaison for the sheriff and police departments.

The police notifies the chief of the Disaster Committee, who goes to the scene of disaster.

The chief of the Disaster Committee evaluates the situation from the medical viewpoint.

Telephone Contacts

The Physicians Exchange will contact by telephone the following:

1. Members of the disaster scene team informing them to go immediately to the scene of the accident. The team is composed of Drs. M. C. Davidson, H. J. Bell, and B. L. Goodloe.

2. Doctors, who will be notified to report to their previously assigned hospitals.

3. El Paso General Hospital, Hotel Dieu, Providence Memorial Hospital and Southwestern General Hospital. These hospitals will then check on authenticity of the accident report; call auxiliary personnel such as nurses, pharmaceutical personnel, and central supply personnel; set into effect their own disaster plan; if necessary discharge well patients to make room for incoming patients; and set up waiting room for victim's relatives, thereby decreasing confusion in hallways.

Blood Bank Used

Services of the Southwest Blood Bank of El Paso will be utilized.

Dr. Craige is also in charge of coordination with the hospitals.

The Red Cross will be notified and will furnish first aid at the scene of the accident and participate in transporting victims to the hospital.

Dr. R. J. Cardwell is responsible for coordination with the Red Cross. He is also in charge of transportation, including the use of ambulances, taxicabs, the El Paso City Lines buses, and local flying services.

Radio and television stations will also be notified. The stations will in turn make 30-minute announcements for doctors and auxiliary hospital personnel to go to their assigned hospitals. Dr. J. B. Miller is responsible for this phase of the program. Radio units of local taxicab companies will also be utilized.

Simultaneous Steps

The various steps of the emergency procedure will be taken, in most cases, simultaneously. The plan is designed so that it may be adapted to the particular requirements of the disaster.

The assignment of doctors to various hospitals is based on specialties and types of practice. For example, general practitioners will be divided roughly among the four hospitals. The same principle applies in the assignment of specialists, so that various classifications of doctors will be available at each hospital.

The entire active membership of the El Paso County Medical Society will be mobilized for the disaster. A total of 202 doctors will be available for the disaster operation.

Demerol Poisoning

Ingestion Of 1250 Mg. Of Demerol (Isonipecaine) With Suicidal Intent

Cohen, A. E., Ann. Allergy 8:547, 1950

The patient described ingested 1250 mg. Demerol in a single dose, an amount exceeding the largest individual dose recorded in available literature. Gastric lavage and supportive therapy resulted in the patient's complete recovery without sequelae. Cohen states that the efficacy and relative low toxicity of Demerol suggests its use among patients "in whom suicidal tendencies may be suspected."

Clinical Clippings, October, 1950.

ORIGINAL ARTICLES

The Post Polio Calcaneo-Valgus Foot*

By Louis W. Breck, M. D., El Paso

Introduction

The subject of this paper was suggested by Dr. Eggers, professor of orthopaedic surgery at the Medical Branch at the University of Texas at Galveston with a statement by him that he thought this would be a particularly good subject for discussion because of the fact that very little has been written on it.

In reviewing The Journal of Bone and Joint Surgery from 1932 to the present date not a single article was found on this exact subject. A number of very good articles on deformities of the feet due to poliomyelitis have appeared in this journal from time to time but none has dalt specifically with calcaneo-valgus deformities only.

By definition a calcaneus deformity is one in which the os calcis projects downward towards the sole of the foot and anteriorly towards its fore-end, so that the heel touches the ground first when the foot is placed on the ground. The degree of calcaneus is variable in different patients but usually if this deformity occurs it has a tendency to gradually progress and become a very severe one.

Foot Bent Outward

By definition a valgus deformity of the foot is one in which the foot is bent outward. This deviation may be quite variable. Accompanying the valgus deformity there is a more or less marked pronation of the entire foot. An abduction deformity of the entire foot may occur, and in fact usually does.

It is felt that the term valgus very much better describes the deformity than either forefoot abduction or pronation as these imply a voluntary placing in the abnormal position rather than a true valgus deformity.

There has been in the past some confusion about the terms valgus, pronation, eversion and abduction.

Difference of Opinion

There is still some difference of opinion among various authorities as to exactly how comprehensive each of these terms is. An outward bending of the foot is essentially what valgus is and the foregoing remarks represent pretty much the consensus of opinion among orthopaedic surgeons as to the terms involving the various components of this combined deformity.

A combination of calcaneus and valgus deformities in the same foot occur together relatively frequently. The severity of the deforming force in each case will be an important factor involved in the difficulty in treatment. The deformity is usually persistent and progressive. It almost invariably requires surgical treatment. There is a marked tendency to recurrence.

Non-Surgical Treatment

In general the non-surgical treatment of this deformity is unsatisfactory. The long range conservative treatment is usually reserved for patients with mild deformity and with little or no tendency to progression. Such cases are not encountered often.

One important point in connection with the treatment of these cases is that when the deformity is first noted great attention should be paid to it and it should be watched very carefully for progression.

The degree of progression should be noted and surgical treatment rendered relatively early but not before one and one-half years have elapsed to allow full return of the paralyzed muscles. As to when surgical treatment should be rendered will be discussed in some detail later in this paper.

Conservative treatment usually consists to start with of a longitudinal arch support, an inner wedge on the sole and heel of the shoe and sometimes a general elevation of the heel.

A Thomas heel and special shoes are employed by some orthopaedic surgeons. A double bar ankle brace with a reverse (dorsi-flexion) stop at a right angle and with an inside "T" strap is effective in partially controlling the deformity.

General Considerations

Although in this paper the two elements of the deformity; the calcaneus and the valgus, will be considered separately as far as surgical treatment is concerned, it is really not proper to separate them in the orthopaedic surgeon's mind. Instead they should really be considered together and treated as two integral parts of the same deformed foot.

In connection with the general consideration of this problem care should be given to the conservative management as outlined in the preceding remarks. Although it is quite true that conservative treatment is not satisfactory on a long range basis, it is usually helpful in preventing rapid progression of the deformity and in preventing an extreme degree of deformity before surgical treatment is undertaken.

*Read at the meeting of the Texas Orthopaedic Association in Galveston

Age of Treatment

The age of treatment at which surgical intervention can be undertaken is quite different in the two components of this deformity. The calcaneus deformity is usually not amendable to satisfactory surgical treatment by arthrodesis before the age of eight. This represents the consensus of American orthopaedic surgeons thinking.

An arbitrary age of eight has been pretty well established in times past as the earliest time at which extensive bone work should be undertaken. One reason for this is that a good deal of growth disturbance of the bone may and in fact often occurs if the child is operated on earlier than the age of eight.

Some orthopaedic surgeons prefer to wait till the age of 10 or even 12. If the surgical program on the bones is undertaken earlier care should be taken not to get into the bone itself very far and instead confine the surgery to the joint surfaces.

Earlier Procedure

The procedure described by the group under Dr. Green's direction in Boston and popularized recently by Dr. Grice may be done much earlier, at least as early as the age of four. This procedure will be described later in this paper and consists primarily of placing a bone graft in the sinus tarsae on the lateral aspect of the foot.

In regard to tendon transplantation which is directed at both components of the deformity, this may be done much earlier than the age of eight and in fact, may be undertaken at almost any age. It should be done as early as the deforming force can be carefully analyzed and intelligent treatment outlined but not before 18 months after the acute attack of poliomyelitis.

In connection with the general remarks on the calcaneo valgus foot, attention should be called to the easy confusion which may occur between this deformity and a flail foot. A flail foot presents a considerably different problem and its treatment is different from that of the calcaneo-valgus deformity.

It is obvious that tendon transplantation in a flail foot will in general prove to be of no avail since no functioning muscles are present whose tendons may be transferred to correct function or prevent or correct deformity. It is relatively easy to confuse a flail foot with an equino-varus foot and careful attention should be given to this point.

The Calcaneus Deformity

The etiology of the calcaneus deformity is a severe or complete paralysis of the gastrocnemius muscle or the entire triceps surae muscle group. The etiology is clear cut. A lack of pull on the posterior aspect of the os calcis through the Achilles tendon causes a downward and forward rotatory displacement or deformity of the os calcis.

In order to correct the deforming force the proper approach to the problem is to transfer the tendons of non-paralyzed muscles into the area of the attachment of the triceps surae group; that is into the most posterior portion of the calcaneus bone. Muscle transfer is quite effective in controlling this deformity if there are strong muscles to transfer and especially if there is a little power left in the triceps surae.

The muscles which may be transferred to supplant or assist the triceps surae group are those on the lateral side of the foot and ankle, the inner side of the foot and ankle, the posterior aspect of the foot and ankle, and the anterior aspect of the foot and ankle.

Lateral Side

On the lateral side of the foot and ankle the peroneus longus and the peroneus brevis are present. If they are strong they are the primary force in producing the valgus deformity which will be discussed later. Thus, by transferring the peroneus longus and brevis posteriorly into the back of the os calcis both the calcaneus and valgus deformities are attacked at the same time.

On the inner side of the foot and ankle the tibialis posterior tendon and the flexor digitorum communis longus tendons are available for transfer. One or preferably both of them may be transferred.

On the posterior aspect of the ankle the flexor hallucis longus tendon is available for transplantation into the os calcis.

On the anterior aspect of the calf the tibialis anterior tendon is sometimes available for transfer. The transplantation of this tendon is accomplished by passing it through a large window in the intermuscular septum between the tibia and fibula and then running it back to the posterior aspect of the os calcis. This operation is sometimes performed and often is successful.

Smaller Percentage

It is attended with a much smaller percentage of success than the transplantation of the other tendons for two reasons. The tibialis anterior is a direct antagonist of the triceps surae group and therefore, is not as good a tendon to transfer as one which is somewhat less antagonistic in its function. The other reason it less often works is that it becomes stuck in the tunnel between the tibia and fibula and does not function.

There is one other operative procedure on a tendon which is sometimes done. This is a translocation operation in which the tendon of the peroneus longus is transferred to a groove under and posterior to the os calcis. This groove in the os calcis is made at the time of operation and the tendon placed in it. This procedure has never proved very popular.

Transplanting Tendons

In connection with transplanting the tendons of active muscles which are to be used as substitutes for

the triceps surae it is generally recommended that these tendons be placed through a hole in the os calcis just distal to the attachment of the Achilles tendon, after first passing the tendon or tendons through the Achilles tendon.

It is generally conceded that this is superior to suturing the tendons into the Achilles tendon near its attachment. Many orthopaedic surgeons do however, simply suture the tendons into the heel cord rather than passing them through the os calcis.

Following the transplantation the extremity should be splinted or immobilized in plaster for about three weeks to allow the transplant to become firmly attached to the bone or tendon. Motion can be begun relatively early in these cases since children's repair ative processes take place very rapidly.

Muscle Re-Education

The importance of muscle re-education following the transplant cannot be overemphasized. It is of considerable importance to have an adequate physical therapist work with these children until they understand just how to use their newly transplanted muscles.

It is not the intention of this author to paint too glowing a picture as to the percentage of success which may be anticipated with tendon transplants for calcaneus deformity. There are many variables which enter into the end result statistics which may be anticipated.

However, a really good function from a transplanted muscle often does not occur and often the orthopaedic surgeon is disappointed as to the amount of actual effective power in the disabled extremity following the muscle transplant.

In connection with the treatment of the calcaneus deformity arthrodesing operations are quite important, especially the triple arthrodesis. These will be discussed in detail in the succeeding section in connection with the valgus deformity.

The triple arthrodesis is mentioned here in the discussion of the calcaneus deformity to emphasize that this operative procedure treats not only the valgus deformity but the calcaneus deformity as well.

The Valgus Deformity

As mentioned above transferring the peroneal tendons is very effective in removing the deforming force which causes the foot to go out into valgus. The transplantation of these tendons should be undertaken at an early age.

An important consideration in the treatment of the valgus deformity is some type of arthrodesing operation. The triple arthrodesis should be mentioned first because it is by far the most important operative procedure in the treatment of poliomyelitis deformities of the foot.

This operation was described by Ryerson in 1923. The operation was actually evolved from the Hoke combined subastragular arthrodesis which was described by this great crippled children's orthopaedist in 1921. Dunn of England described an arthrodesis similar to this in 1923 but without the arthrodesis of the calcaneo cuboid joint.

It was Dr. Ryerson of Chicago who first recognized the importance of fusing all three joints: the subastragaloid joint, the astragalo-scaphoid joint, and the calcaneo cuboid joint. The triple arthrodesis is the best operation for stabilizing the foot.

Triple Arthrodesis

The triple arthrodesis can be very conveniently combined with a wedge osteotomy to correct the forefoot valgus deformity present. A considerably greater amount of bone may be removed from the medial aspect of the foot than the lateral aspect and in this way the forefoot can be placed in mid-position at the time the triple arthrodesis is done.

Another thing which may be done is to re-shape the undersurface of the talus and the superior posterior surface of the calcaneus to place the calcaneus squarely under the ankle and also to decrease a calcaneus deformity which may have developed. The triple arthrodesis is a very versatile operation for remodeling a deformed foot.

As previously mentioned it is generally considered hazardous to do a triple arthrodesis earlier than the age of eight. At the time the triple arthrodesis is done regardless of age it is of great importance to avoid getting down into the bone too far if the bone is still in a very actively growing stage.

It may be readily seen that extensive bone work at the time the arthrodesis is done will produce damage to growing bone and certainly will produce at least some further difference in size between the two extremities.

Stabilizing Major Joints

Before leaving the subject of the triple arthrodesis the author of this paper would like to mention the matter of stabilizing the two major joints following the completion of a triple arthrodesis. In 1943, Dr. Guy Caldwell first described this technique. However, he transfixed all three joints with small pins or heavy Kirschner wires. The talo-calcaneo, the calcaneo-navicular, and the calcaneo-cuboid joints were all pinned in proper position under direct vision.

Ever since learning of this operative technique I have consistently used it. I have however, discontinued pinning the calcaneo-cuboid joint as it has very little tendency to slip out of position if the other two major joints are transfixed in excellent position. Since describing his original technique Dr. Caldwell has discarded it in favor of usage either staples or vitallium wood-fasteners to hold the joints.

Small Pins

In employing the small pins what is done is simply to carefully transfix the astragalo-scaphoid joint in the exact position desired, this transfixtion being done under direct vision. The pin is inserted

from before, backward. Following this, the subastragaloid joint is transfixed very carefully from below upward in a similar way.

After these joints have been transfixed the heavy wires or small pins are left protruding through the skin. They are bent at a right angle and cut off except for a small piece. The reason for bending them is to prevent their inward migration. Following this part of the operation the closure is done in the usual way and a cast applied.

Precision Fixation

I feel that it is quite desirable to do a precision fixation of the two major joints involved in a triple arthrodesis rather than doing the so-called moulding of the joints as is commonly done without precision fixation. I leave these pins in usually for six weeks until a good beginning union of the joints has occurred.

The pins may be removed earlier if desired or if there is evidence of undue irritation around them. Usually they do not become irritated and may be left in right through the change of cast which is usually done at three weeks.

Dr. Caldwell and his associates mention that the pins are undesirable because of the pain which the child has at the time they are removed. I feel that the amount of pain they have is insignificant and only momentary in any case.

An anesthetic is not required for removal of the pins even if they are stuck tightly. I believe that the advantage of pin fixation are great and the disadvantages small.

Care Required

Care must be exercised not to place these pins across the ankle joint or through an important tendon. One of my associates has wondered if perhaps this pin fixation may not be instrumental in producing a non-union of the joint or joints which one is attempting to fuse. I believe the reverse is true, and that the pins tend to hold the joints more securely. They constitute a sliding internal fixation type of arrangement which allows the joints to slip together rather than holding them apart.

Non-union is fairly common following a triple arthrodesis operation and it is my definite impression that pin fixation of these joints tends to decrease the percentage of non-union rather than increase it. I am pleased with the pin fixation and do not intend at this time to discontinue it in favor of some other type of internal fixation.

Operation Described

Dr. Grice of Boston in 1952 described an operation suggested by Dr. William Green for doing a bone graft on the lateral aspect of the foot in the region of the sinus tarsae. Since then, additional articles have been published by this Boston group regarding this.

The operation is relatively easy to do and the joint surfaces themselves are not disturbed at the time of the operation since it is essentially an extra-articular procedure. One or more struts of bone are placed vertically between the astragalus and the calcaneus on the lateral side of the foot in the region of the sinus tarsae.

These grafts are wedged into position so that they do not slip out. This operation has considerable merit both as to its effectiveness in controlling the progression of the valgus deformity and likewise has a big advantage in that it may be done early.

Just how much it is effective in preventing the calcaneus element of the deformity is not apparent as yet to this author. The operation as far as can be determined is relatively innocuous even when done at an early age.

Astragalectomy

No discussion of the treatment of the calcaneus deformity of the foot would be complete without describing and discussing the operation of astragalectomy. This was described originally by Whitman and for many years was a standby in the armamentarium of the orthopaedic surgeon. In more recent years it has become increasingly less popular.

The reason for this is that it is an extensive operative procedure and is really a reconstruction type of surgical approach rather than a precision type of operation such as the tendon transplants and triple arthrodesis are and in addition to this, considerable shortening of the extremity is produced. In an occasional well selected case however, astragalectomy probably still has some usefulness.

Astragalectomy accomplishes a number of things at once. By removal of the astragalus a great deal of slack or room is gained in the posterior portion of the foot. This allows the calcaneus to move posteriorly and upward into a more normal position. The back part of the longitudinal arch is thus flattened and restored to a relatively normal position.

Mechanical Advantage

Weak muscles which have been transplanted into the posterior aspect of the calcaneus are given a very great mechanical advantage because the os calcis now points posteriorly and presents a long lever arm upon which the muscles can act. Generally speaking no marked improvement is obtained in the forepart of the foot.

Astragalectomy has the disadvantage that it usually ends up with the patient having a painful foot. The lower end of the tibia fits rather crudely into the defect where the astragalus was formerly located.

A fairly satisfactory joint arrangement does develop however, and this occurs especially in younger children. Usually later in life a considerable amount of traumatic arthritis develops in the new ankle joint and almost always there is a varying degree of pain present when the ankle is used for a substantial amount of walking and standing.

General Considerations

There has been throughout the years a good deal of discussion as to whether a triple arthrodesis and a tendon transplant should be combined at one operative procedure. The consensus of opinion is that it is better to do them at separate times but in actual practice it is surprising how often orthopaedic surgeons combine the two procedures at one sitting. The tendon transplant should be done at as early an age as practicable whereas the triple arthrodesis should be put off until the age of eight.

If there is no urgent need to do the tendon transplant sooner it is a great temptation for the orthopaedic surgeon to do the two operations at the same time. There is little doubt but that at least somewhat better results will be obtained if the operative procedures are not done at the same sitting. The reasons for this are obvious.

Deleterious Effect

The prolonged period of immobilization in plaster required following a triple arthrodesis (eight to twelve weeks) has a deleterious effect on the transplanted tendons as motion and exercise of these should be started much earlier. Also when an extensive bone operation has been done on the foot inflammation occurs in the soft tissues all around the area. This is in addition to the inflammation produced by the tendon transplant operation. Thus, a significant amount of additional fibrosis and adherence may occur.

Some orthopaedic surgeons may aver that the disadvantages of doing the two procedures at once do not out-weigh the advantage of having the patient submit to only one general anesthetic and major operative procedure. This type of reasoning has some merit but in the minds of most orthopaedic surgeons the reverse is felt to be true. In other words two operative procedures are not as deleterious as the combined operative procedure.

Important Point

In describing the calcaneo-valgus deformity I have not as yet brought out an important point. The development of a progressive cavus deformity may occur. This may require additional treatment and a plantar fasciotomy should be done in combination with a triple arthrodesis in some cases.

The subject of recurrence of the calcaneo-valgus deformity should be mentioned. Sometimes in spite of everything that can be done the deformity recurs or tends to recur. Frequently additional operative work in the form of a wedge osteotomy may be required. When this is inevitable the surgeon should unhesitatingly go ahead and do another operative procedure on the patient where it is clearly indicated.

If a triple arthrodesis fails to fuse it is almost always necessary to go back and make another attempt to obtain fusion. Statistically the second attempt to obtain fusion is attended with nearly as good statistical results as the first attempt and therefore, every effort should be made to continue with the case until a good triple arthrodesis with solid union is secured.

Discussion of Cases

The author would like to state frankly that he has had only a limited experience with calcaneo-valgus deformities following poliomyelitis. He has done through the years a handful of these cases and has had the opportunity to follow some of them for a long time.

In the half-dozen or so cases which the author has done he has not been able to follow them in a statistically significant number of instances. Follow-up studies on these patients seem to be difficult to obtain in our hands. The reason for this is that they have to be followed for a long time and when an attempt is made to get them in for a final check-up they have been lost because they do not answer correspondence largely because their correct addresses cannot be located.

However, I have the impression that the majority of the cases have turned out reasonably well considering the relatively severe nature of the deformity. One of them has had to be done over because of recurrence of the deformity. Two others have had transferred tendons pull loose which have had to be replaced.

Good Results

Transplantation of the two peroneal tendons and the tibialis posterior into the os calcis has given good results in a relatively high percentage of cases and a triple arthrodesis has been a very satisfactory operation.

It must be admitted that my own conclusions are based on my impression of results rather than on any statistical analysis of cases treated.

Conclusions

In attacking the problem of the post polio calcaneo-valgus foot deformity its early recognition is most important. With paralysis of the triceps surae group of muscles an early tendon transplant to replace their function is indicated if suitable muscles are available for this purpose.

The triple arthrodesis is the most important operation in controlling and correcting the calcaneus deformity. Care should be taken not to do this operation too early and exercise judgment in the selection of cases for it.

The over-all picture of the correction of this deformity is good although recurrences are common and frequently an additional surgical attack on the problem is required later on in the case.

Summary

An analysis of the problem of the calcaneo-valgus deformity of the foot following poliomyelitis is gone into in some detail.

(Continued on Page 58)

Fractures of the Spine and Pelvis*

By Lewis A. van Osdel, Major, M. C., William Beaumont Army Hospital

Through the ages man has been aware of fractures involving the spine but for the most part the only recognized ones were those with severe deformity or with neurological complications. For the most part these were due to direct blows in combat or falls from a height. The incidence of such fractures in the days of four masted sailing vessels was comparatively high.

Not until 1895 did Kummel describe the kyphosis resulting from a missed fracture of the spine—presumably a compression type. Since the x-ray has been developed various types of spinal fractures have been noted. Although these various types take specialized treatment; as a whole, one is concerned mainly with fracture-dislocations and compression fractures.

Ominous Connotation

Fractures of the spine as a whole have a very ominous connotation to the layman and physician alike. In fact, to many of us the picture of immediate or impending death and the threat of paralysis is omnipresent. If one realizes, however, that only 5-6 per cent of all fractures involve this area and further that only 10 per cent of all spinal fractures have significant neurological findings the picture is less foreboding. Unconsciously all of us remember our first paraplegic or quadriplegic and the complications attendant thereto when fractures of the back are mentioned.

I personally feel that it is more important to recognize uncomplicated spinal fractures and treat them energetically enough to rehabilitate them without significant morbidity, than it is to make the immediate diagnosis of the exact level of a patient with obvious cord damage.

Usually a routine examination for gross deformities, muscle spasm, localized pain over the spinous process, reflex changes, sensory changes, or frank weakness or paralysis will usually group our patients readily for us. The more refined clinical examination of the patient with some obvious neurological involvement will be discussed later.

Causes Listed

In this day and age, indirect violence and muscle action account for most of the spinal fractures whether due to falls from a height, blows from heavy object on the shoulders or back, automobile accidents, or acute flexion injuries such as we see in diving accidents.

The basic pathology in almost all spinal fractures except those of the transverse and spinous processes is due to an acute hyperflexion injury, either forward or lateral, in which the body is crushed along with damage to the posterior elements, intervertebral discs, interspinous ligaments, and often with associated spinous process injury.

After compression of the body has taken place, variable disruption of the posterior elements ensues. If carried far enough, the force will then displace the body above with resultant elongation or narrowing of the lumen in which the cord lies either by direct bony encroachment or from hemorrhage and edema. The anterior longitudinal ligament usually remains intact and acts as a check rein.

Compression fractures constitute over 50 per cent of these fractures and as such include the greatest portion of the important fractures less the frank dislocations. Of this group some 70 per cent are located in the dorsolumbar region at the junction of the fixed thoracic spine and the mobile lumbar spine. The lower lumbar spine is then next involved followed by the cervical spine and last of all the dorsal spine above D11.

An accurate history of flexion injury, suspicion of fracture, along with girdle like pain and the findings of, localized pain over spinous process, muscle spasm, and a frank kyphosis will establish the clinical diagnosis. Generally speaking if the patient has no gross sensory changes and can move all four extremities without obvious weakness, one can direct his attention to the fracture and place the problem of neurological involvement in the background.

Patient Supine

Through the ages these fractures when noted were treated by keeping the patient supine in bed. After the advent of plaster in 1853 application of body casts, in whatever position the fracture fragments happened to be, was accomplished. In 1923 Wallace described a gradual hyperextension frame for treatment of fractures of the spine. Most of his cases were old fractures.

Fresh fractures continued to be treated by simple immobilization alone until 1929 when A. G. Davis published his manipulative method of correction of spinal deformities followed by applying hyperextension type body casts. Prior to Davis' paper the rule was hyperextension frame for six months, body cast for six additional months and then brace for one year or more.

Davis' manipulation consisted of overhead traction on feet in position of hyperextension and application of body cast. In 1931 Watson-Jones came out with his postural reduction by suspension. Various authors came out with various frames such as Bradford, Herzmark, Ryerson, etc., all of which utilized the hyperextension idea and reduction of the compression deformity if at all possible.

Unfortunately the cast was worn for 5-8 months following reduction and then a brace for 12-18 additional months without regard for rehabilitation of

*From Symposium on Surgery in Acute Trauma delivered at William Beaumont Army Hospital, April 1956

back musculature. In the 1930's the Germans after Boehler began intensive rehabilitation in body casts which had large abdominal holes cut in them.

During World War II manipulative reduction plus cast plus strenuous resistive exercises became routine so that upon removal of the cast no brace was necessary. At last it was recognized that the best spinal brace is good strong musculature. Statistics show that 90 per cent of AAF spinal injuries of World War II returned to duty with this regime.

Bolder Treatments

Throughout the 1930's J. A. Key and others would treat the compression fracture in the aged by bed rest without manipulation followed by bracing and ambulation after 8-10 weeks. In England various men associated with the coal mining industry were gradually becoming bolder and treated by so-called functional methods. The foremost of these was E. A. Nicholl, Mansfield, England, who wrote in the British Bone and Joint Journal of 1949 on fractures of the dorsolumbar spine.

In Nicholl's series one finds interesting food for thought. It included all spinal fractures over a six year period ending 1949 with 2 to 5 year follow up on all patients. In his series he noted the following main groups:

Anterior wedge fractures_58 per cent
Lateral wedge fractures__15 per cent—A new type
Fracture-dislocations____19 per cent
Isolated neural arch fx__09 per cent

Frank Departure

In discussing Nicholl's work one is impressed by his frank departure from all teaching to date on the continent by such outstanding orthopedists as Boehler and Watson-Jones in England, and Key and Conwell and others in America. These men had all insisted that good functional results were directly proportional to the ability of the surgeon to reduce the fracture.

The level of injury in this series hit the usual peak in the lower dorsal and upper two lumbar levels. Interestingly enough no example of extension type injury was included but all injuries here were sustained while working at the coal face.

In his anterior wedge group he noted that if minimal deformity only was present that usually the interspinous ligament had remained intact and the fracture was completely stable. If there was severe comminution he felt these fractures were really a fracture-dislocation type and were unstable. He felt that the fulcrum in a compression fracture was at the nucleus pulposus as Calve had inferred in 1930 and further that the crux of such injuries was the intact vs the ruptured spinous process. He noted the so called concertina type of fracture was fairly common in older workers.

Fractures Regrouped

After classification of his fractures as above, Nicholl regrouped them for purposes of treatment into two groups:

(1) Stable fractures: Mild and moderate anterior compressions, lateral wedge fractures and all laminal fractures above L4.

(2) The unstable fractures are: Severe compression type, all fracture-dislocations, and all laminal fractures L4.

The functional treatment of stable fractures outlined by Nicholl consisted of: Completely ignoring the reduction or immobilization of fracture. Bed rest for four weeks with intensive extension exercises and daily heat and massage to back. At four weeks patients were ambulated and transferred to rehabilitation center where they were given intensive exercises to rehabilitate back muscles. At eight weeks they were graduated to strains and stresses reduplicating stresses which would be found upon return to the coal face and hence was actually a hardening phase. At twelve weeks almost all had been returned to work.

Cast in Neutral Position

The functional treatment for unstable fractures was application of a protective plaster cast in neutral or so called physiological position. The vertebral bodies were thus permitted to approximate in plaster and where there had been disc and ligament injury, collapse of the space and spontaneous anterior fusion ensued. Of ten fracture-dislocations in this series some seven fused spontaneously and returned to mine work with best results in the entire group. No patient with a surgically fused spine was ever returned to mine work.

Treatment of isolated fractures of the neural arch was carried out depending on level. If above L4 they were considered stable and were treated by functional method. At and below this level fusion was done immediately with accurate anatomical reduction in these deemed important.

Treatment of lateral wedge fractures was varied depending on extent. Basically these are stable and should be treated by functional method. Where there is neurological involvement, however, one is justified in treating them as a fracture-dislocation by immediate fusion. This group gives the worst prognosis.

Considerable Time

I have spent considerable time going over Nicholl's works simply because I belong to the school of functional treatment of fractures of the spine bases on his classification of unstable versus stable fractures. At Brooke Army Hospital and here at William Beaumont Army Hospital over the past five years all fractures have been so treated with very impressive results compared to World War II standards.

Only a spattering of cases have resulted in separation via boards, where the patient did not have 20 years of service, with most returning to temporary limited duty and eventually full duty with little difficulty. We in the military feel that this treatment is good. Many of our civilian confreres agree, but be-

cause of the possibility of legal action tend to treat by the old method.

That reduction has any direct relationship to final result is very doubtful. Some unbiased workers such as Baab and Howorth in 1951 found no significant relationship between functional results and anatomical reduction. In fact, some 94 per cent of their series had redisplaced sometime after initial reduction. Almost all agree that four months of plaster is necessary to prevent redisplacement of a high number of cases.

Transverse Processes

Fractures of the transverse processes are due to a rotational injury with the iliopsoas musculature pulling the process off. Here no attempt is made at reduction. The whole solution is treating the soft tissue injury which may be severe. Retroperitoneal hemorrhage is common here with its attendant complication of paralytic ileus.

Here at William Beaumont many of these patients require nasogastric suction with supplemental intravenous fluids and rare sips of water orally until good bowel sounds are present or patient is passing flatus. These patients are sore. A short period of rest followed by active extension and finally flexion exercises will get most of these back to duty in 3-8 weeks at most.

Fractures of the spinous processes without other injuries are not common. Clay shoveler's syndrome consists of fracture of the spinous process of C7 or T1 when shoveling with long handled shovel in clay which tends to put a tremendous stress on the lower nuchal ligament which may snap off the processes of the spines adjacent to the relatively immobile dorsal spine. Local injection, limitation of motion for a few days usually get these patients back to work.

Cervical Spine

Fractures of the cervical spine usually are of the dislocation type although this is usually very difficult to demonstrate. Locked facet syndrome is noted. I refer you to Standard texts for methods of reduction of these manually. The whip lash injury, cervical discs, and wry neck all respond to conservative therapy in time. It is important to obtain routinely AP, lateral, and both oblique views in this region — in fact the PA is better than the AP. Odontoid views should routinely be included. One must be reasonably certain that the arms are pulled down and that C7 and T1 views are noted — especially in heavy, short necked people in which this area is routinely missed by most technicians.

We treat cervical fractures here with skeletal traction by means of Vinke tongs or Crutchfield tongs for a period of six weeks followed by a four poster type of cervical spine brace. Open reduction and fusion is done on those felt to be grossly unstable or where reduction cannot be done by traction and hyperextension methods. A total of three months immobilization is carried out before guarded flexion and extension films are obtained to check stability even in the fused cases where spinous processes have been wired.

Difference of Opinion

Treatment of fracture dislocation with obvious cord or cauda equina injuries has been left to last because there is so much difference in opinion here. I personally feel that where there is clinical evidence of a complete lesion one must base a decision to perform a decompression laminectomy wholely on the results of a good, careful lumbar puncture and Queckenstedt test as originally outlined by Coleman and Dowman.

One would necessarily miss an occasional case of splinter into the dura with cord compression not noticed on x-ray as we have seen within the past year at William Beaumont. The unnecessary shocking procedure of laminectomy to an already seriously injured person does not seem warranted as a routine procedure in all cases of paraplegia. When performed, this procedure should be done in the first 48 hours if maximum benefit is to be obtained even realizing delayed changes are noted.

Fractures of the pelvis consist of three main groups:

(1) Avulsion fractures due to muscular violence.

(2) Fractures and dislocations of the pelvic ring due to crushing trauma.

(3) Injuries of the sacrum and coccyx.

The first group is seen in young athletes where the rectus femoris avulses the anterior inferior iliac spine, sartorius avulses the anterior superior iliac spine or the hamstring avulses the ischial epiphyses. All respond to bed rest with hips flexed to place the involved musculature at rest.

Second Group

The second group most commonly results from trauma of automobile accidents. Where the involvement is of one ring only it is stable whereas when both rings on the same side we have a relatively unstable fracture. In either cast treatment consists of resting supine in bed for 6 weeks when stable and up to 12 weeks when unstable before ambulating. Displacement of concommitant sacro-iliac dislocations or subluxations are best treated by skeletal traction or well leg traction as one prefers.

One must always remember the possibility of bladder and urethral injuries where the pubic rami are fractured and symphasis separated and appropriate diagnostic measures and therapy instituted to prevent contamination and infection. Where the acetabulum is fractured, skeletal traction as in dislocated hip is indicated. For frank dislocation of os coxae without fracture, I refer you to the classical paper on this subject by Dr. W. N. Eggers, Galveston, Texas, as follows: Vol LXXXIII, No. 3, Mar 52, page 300-307 American Journal of Surgery.

Closure of symphasis diastasis when associated with

(Continued on Page 59)

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

November 15, 1956

FREDERICK P. BORNSTEIN, M. D. — EDITOR — CASE NO. 459

PRESENTATION OF CASE BY DR. WAYNE L. LORENTZEN

History — Dr. Nathan M. Kleban:

A 64 year old married retired railroad laborer was dead on arrival at the El Paso General Hospital emergency room on April 9, 1955.

Beginning in 1952 he had symptoms of exertional breathlessness, orthopnea, paroxysmal nocturnal dyspnea and swelling of the feet and ankles appeared and progressed. This train of events led to his first admission to the hospital in July, 1954.

In addition to the findings of cardiomegaly and decompensation there was a blood pressure of 150/50; a grade III harsh systolic murmur loudest over the primary aortic area, transmitted to the neck and apex; a grade II diastolic murmur heard over the primary and secondary aortic areas; pulses were bounding.

Laboratory:

Blood Kolmer and Kahn were positive, the latter 128 units. Spinal fluid protein was 25 mg. per cent, with no cells, a weakly positive Kolmer, and a gold curve of 0012210000. The X-ray film of the chest was reported as demonstrating pulmonary vascular congestion, a left pleural effusion, and cardiomegaly, particularly the left atrium and right ventricle, but including the left ventricle. First degree A-V block and left ventricular hypertrophy were interpreted on electrocardiogram. A cardiac consultant felt the patient had luetic aortic insufficiency with relative functional stenosis.

Procain penicillin in dosage of 600,000 units daily was administered for 10 days. On routine cardiac therapy he improved and was discharged.

Patient Readmitted

The patient was readmitted because of symptoms and signs of cardiac decompensation three weeks later, again in January, February and April, 1955. At the time of the fourth admission in February, 1955, the Kline test was negative, and the radiologist had made a diagnosis of hypertensive cardiovascular disease in interpreting the chest film.

In April, 1955, the patient's fifth and final admission to the El Paso General Hospital ward occurred because of difficult breathing. Temperature was 99.2, but normal thereafter. Heart rate was 96, rhythm regular, blood pressure range was 136-114 systolic, 50-28 diastolic.

Neck veins were distended; there was 3+ pitting edema up to the knees; the liver edge was felt 3 fingers-breadth below the right costal margin; the heart was enlarged to the 6th left intercostal space in the anterior axillary line. The second aortic sound was louder than the pulmonic. There was described a harsh systolic murmur and a short diastolic murmur, heard over the entire chest but loudest at the 6th ICS in the AAL.

Liver Enlarged

The liver was enlarged. Blood Kolmer and Kahn were again positive. X-ray of the chest was said to demonstrate enlargement of all chambers and widening of the thoracic aorta. Electrocardiogram was interpreted as demonstrating first degree A-V block and left ventricular hypertrophy.

Arm-to-tongue Decholin circulation time was 35 seconds. Treatment consisted of aminophylline, mercuhydrin, bed rest with feet elevated, low salt diet, diamox, digitoxin, and tetracycline. The patient was discharged improved on the 8th day, April 9 — to what extent was not stated.

The patient denied symptoms of rheumatic fever, evidence of or treatment for venereal disease prior to his first El Paso General Hospital admission, chest pain, syncope, hemoptysis.

Blood Counts Unremarkable

Routine blood counts were not remarkable. Trace to 1+ albumin was present in the urine on most admissions. Pyuria was reported at the time of his February, 1955 admission. A urinalysis report is not present on the chart of his final admission.

Circumstances which preceded his death on the day of discharge from the hospital are not revealed in his record.

Clinical Discussion —
Dr. Wayne L. Lorentzen:

In going over this history I think two points should be made as to what are probably the most important factors in the general history of this patient. I think it is important that he was a male, and that he was 62 years old when he first showed any signs of cardiac decompensation.

As far as we know he apparently never completely

got out of decompensation. The disease process was apparently slowly progressive with some periods of remission, but not complete ones.

From the time of July, 1954, until April of 1955 with his five admissions here, he certainly was not in the best compensation. On physical examination I think the important thing is that he had a low diastolic pressure and a moderate increase of the systolic pressure. The murmurs were described as being harsh Grade III systolic, in the aortic area which were transmitted up to and into the neck and also were heard at the apex.

Diastolic murmur was of less intensity and was Grade II. It was also heard in the aortic area and in the secondary aortic area. The only other important thing mentioned was the fact that he had a bounding pulse. There was no mention here as to whether he had a Durozier sign of capillary pulsations.

Significant Observation

In his laboratory findings I think the most significant observation is of course the fact that he had a positive Kahn and Kolmer. His spinal fluid showed only a slight positive Kolmer and the gold curve did show some change but I just don't know whether it is really significant, inasmuch as there were no symptoms referable to his central nervous system.

We also do not know in what manner or form he died. He died on the same day that he was discharged from the hospital. There are some things in his history and physical examination on his chart that aren't recorded here; I don't know whether they are of great importance or not.

For example, he had a pulse of around 60 when he came into the hospital; he usually had a pulse of around 90 or more than that, but as a rule he ran one around 60. In considering the possible etiologies I think it fairly evident that this patient had an aortic insufficiency.

Question of Aortic Stenosis

There was some question, and still is in my mind, as to whether he had an aortic stenosis also. The fact that he was up in his sixties at the time this occurred speaks somewhat against this being due to a rheumatic process. The two commonest causes of aortic insufficiency are rheumatic heart disease and syphilitic heart disease.

In rheumatic fever the aorta is primarily or firstly attacked in the region of the aortic ring, with consequent dilatation in many cases and production of an aortic insufficiency by that method. However, more commonly the rheumatic process attacks the cusps and there is either deformity or shortening of the cusps, producing the insufficiency.

This dilatation and insufficiency that you see when the aortic ring is involved will eventually end up as a very severe stenosis. This very frequently happens in the middle age group, principally because the stenosis is very gradual and the heart is able to compensate and many patients don't decompensate until they get into middle age.

Commissural Valvulitis

The syphilitic aortic insufficiency is primarily a commissural valvulitis. As the commissures become widened, an insufficiency is produced in that manner. A shortening of the cusps can also do it. Syphilis alone very seldom ever produces a stenosis. It usually has to be secondary to some calcification, otherwise it is rarely associated with stenosis.

Subacute bacterial endocarditis has to be considered; however, it is usually secondary to rheumatic fever but can be so prominent that it will be a factor. Vegetations from bacterial endocarditis can become large enough to prevent proper closure and produce insufficiency. This is a very unusual occurrence. More likely an aneurysm of one of the cusps is produced or an erosion of the vegetation on one of the cusps with resulting tear.

Aortic Insufficiency

Traumatic aortic insufficiency should be considered. This was a railroad worker. I don't know whether he worked up to the onset of his disease, but it is well known that a diseased valve with a marked stain of any kind, or a very heavy blow to the chest can produce a linear tear and an aortic insufficiency follows it.

We have no history to support that in this case. As a rule if there is trauma involved the patient has considerable chest pain. There also is a tear in the aorta besides the damage to the valve, and the patient goes downhill very rapidly.

Arteriosclerosis and hypertension can be considered as etiologies. They tend to occur more frequently together, rather than separately in producing an aortic insufficiency. The insufficiency that they produce, however, is more of a functional type. Very frequently there is no true valvular damage, but more of a dilatation of the aortic ring.

Dissecting Aneurysm

A dissecting aneurysm should be considered because it can involve the attachment of an aortic cusp or it may protrude in such a way that it will interfere with closure of the valve.

Congenital lesions are very unlikely, I believe, in this particular case. Practically all of the congenital lesions causing an aortic insufficiency involve a high septal defect. They may be associated with other defects also but the high septal defect tends to give little or no support to one of the medial cusps, and very frequently with the interventricular septal defects there will be a band of tissue that interferes with the proper closing of the valve.

Further Considerations

There are some other things that probably should be considered because the patient had a very large pulse pressure, but they are very unlikely — such as aneurysm of the aorta perforating into either a pulmonary vessel or into the vena cava or even an atrium. As far as we know there is little to support that.

As to the immediate cause of this patient's death, I have very little to say because we have insufficient information. The fact that he had no history of a previous infarction speaks more or less against his having coronary disease, although it may have been present. He could have had an infarction.

In the hospital he had been treated for congestive failure and left after just eight days, so he may have had a fatal episode of pulmonary edema at home. He also could have thrown an embolus from his veins or one of the chambers of his heart.

X-ray Discussion — Dr. Vincent M. Ravel:

The first film that was taken on admission of the patient is a portable examination with the patient recumbent and in an A-P view, so observations were limited of course to an incomplete study. However, we pointed out that there was a decrease in the aeration of the lungs and there was a marked enlargement of the cardiac silhouette and obscuration of both costo-phrenic sulci, particularly on the right, which we felt probably was consistent with or due to an accompanying pleural effusion.

The second examination which we reported upon was done with the patient erect, P-A, and this is the one where it was pointed out we were supposed to have changed our etiological diagnosis. I really didn't make an etiological diagnosis on the first one, and on the evidence that we have here we felt that this was a cardiac enlargement, congestive failure, most probably on the basis of hypertensive cardiovascular disease.

Reason For Opinion

Now the reason we said this was because here we have a patient with congestive failure, with an enlarged heart, and without a significantly enlarged aorta, and on that basis we felt that this was probably secondary to hypertensive cardiovascular disease. The final examination again shows no significant increase in the size of the cardiac silhouette.

However, the obliques now help us a little bit in that we have posterior displacement of the barium-filled esophagus on the right oblique and a marked left ventricular enlargement and encroachment of the sternum in the right oblique again indicating right ventricular enlargement. These changes of course are certainly consistent with a rheumatic heart disease with a double lesion.

The fact that the patient had syphilis somewhat confuses the issue, but I do not see any widening of the aorta and I do not see any calcification in the ascending portion of the aorta which you frequently see with a syphilitic aortitis and an accompanying syphilitic aneurysm. From the radiographic standpoint, then, we have to consider this a rheumatic heart disease with probably a double lesion, aortic and mitral.

Dr. Lorentzen:

The EKG's showed mainly left ventricular hypertrophy and also a first degree A-V block. There were some ventricular premature beats. The rate in all of them was 70 or better. There is nothing in the chart to state whether the pulse was regular and whether there was a pulse deficit or not. I don't know how significant this pulse of 60 was which the patient tended to have when he was compensated.

The two most likely diagnoses are of course syphilis and rheumatic heart disease. However, if we are to believe everything that is on this chart, it makes it very difficult to come to a clear-cut conclusion. The best description undoubtedly in the chart was the one with the very first admission.

Careful Description

The individual who described it did it very carefully and I presume accurately. If there was a grade III harsh systolic murmur which was transmitted definitely up into the neck, it is most likely an organic type murmur. The increased systolic pressure of 150 tends to more or less discount the possibility of a stenosis. We also have to consider that this patient had a positive Kahn.

As I said before, if this is a syphilitic lesion it would be very unlikely to have a stenosis with it, unless there was some associated change, in the aorta, or some secondary calcification of the aortic valves, and I don't think we have any evidence of that on our X-ray.

Clinical Standpoint

From the clinical standpoint there was no good description of a murmur that would show that the mitral valve was involved. However, the radiologists felt that it probably was involved.

I think one thing should be mentioned here. Very frequently in the outset of a pure aortic regurgitation the patient will show a predominantly left ventricular hypertrophy on the X-ray and on physical examination. With failure and mitral insufficiency they can take on a fairly typical picture that would look like a rheumatic heart except that the left ventricle is probably a little larger than it should be with just a pure mitral lesion.

Another difficulty is that this first murmur from its description sounds like an organic stenosis. In his last admission they mention the fact that the second aortic sound was louder than the pulmonic. It is very rare to have such a loud second sound. As a rule the second sound is either absent or not very loud at all in an organic stenosis.

Insufficient Evidence

I have to hang my hat on some diagnosis and actually I don't think that we have enough evidence one way or another to really say 100 per cent but I do feel probably with the positive Kahn that this patient had a syphilitic heart lesion. This occurred when he was rather elderly, of course I have to take into consideration those rheumatic lesions which don't show up until middle age or later. I think the main lesion here is aortic insufficiency, etiology most likely syphilis.

Dr. M. C. Davidson:

Judging from the X-ray I am inclined to believe he had a double rheumatic lesion, mitral and aortic disease. Sudden death is known to be rather common in any aortic valvular disease so that would not be too difficult to explain. Also a pulmonary embolus is possibly the final episode in this man. I am a little doubtful of syphilitic disease, I simply cannot understand why the right ventricle is so big, that is my objection to the diagnosis of syphilitic aortic insufficiency.

Dr. Saul B. Appel:

I think that the description of the physical findings in this case are rather skimpy. The aortic valve is involved. With insufficiency we might get an Austin-Flint phenomenon at the apex which could simulate the murmur of mitral stenosis and throw us off. However, if the first apical sound were described adequately one might be able to evaluate the findings more adequately.

Now it was mentioned that the patient denied symptoms of rheumatic fever. Well, he also denied venereal disease. The history is notoriously unreliable at this age and in fact in our series of cases of rheumatic heart disease over the age of 60 we found that one-third had no history of previous rheumatic fever.

This was not merely due to their poor memory or senility. In a similar group of rheumatic hearts in women who were pregnant and in their twenties to thirties, one-third of them gave no history of rheumatic fever.

Normal Sinus Rhythm

The patient had a normal sinus rhythm throughout his course. That is certainly in favor of syphilis, that is, syphilitic heart disease, as opposed to rheumatic. Syphilitic heart disease is not usually associated with auricular fibrillation. Therefore, if we find a normal sinus rhythm in this patient, this is slight evidence in favor of syphilitic heart disease as opposed to rheumatic.

However, on the other hand, the incomplete block which was described on several EKG's makes it very tempting, at least to me, to think of aortic stenosis with erosion of the stenotic calcific valve through the septum, knocking out the A-V bundle, which not infrequently occurs.

Rheumatic Heart Disease

Now that, of course, would favor rheumatic heart disease. I am very sorry that fluroscopy of this heart was not described carefully because if there were any calcification in the aortic valve or in the mitral valve, a good fluroscopist such as we have here in this room would see the calcium wafting in the breeze. I suggest that the patient had heart disease and the etiology was rheumatic fever, inactive of course, plus syphilitic heart disease, plus probable arteriosclerotic heart disease, all three of them co-existent, with an enlarged heart, aortic stenosis, aortic insufficiency, mitral stenosis, mitral insufficiency, syphilitic aortitis, coronary sclerosis and myocardial fibrosis.

Clinical Diagnosis: Cardiac decompensation.

Dr. Lorentzen's Diagnosis:
Aortic insufficiency due to syphilis.

Pathological Diagnosis: Mitral stenosis and cardiac hypertrophy; syphilitic aortitis

Pathological Discussion:
Dr. Frederick P. Bornstein:

The autopsy in this case was done with some difficulty because the patient died outside the hospital and all of the embalming had been done. The most impressive finding was the appearance of the heart which was considerably enlarged and weighed about 600 grams. The myocardium was hypertrophied.

The mitral leaflets were fused together, producing a mitral stenosis of the rheumatic type. The aortic valve was anatomically normal; however, a functional insufficiency due to dilatation of the aortic ring in such a hypertrophied heart is a possibility. The ascending aorta was markedly dilated and showed numerous irregular longitudinal scars quite characteristic of syphilis. This was borne out by the microscopic examination which showed the typical necrosis of the elastic fibers which is so characteristic of syphilitic aortitis.

Three Distinct Ways

In discussing syphilis of the cardiovascular system, I would like to point out that there are three distinct and separate ways in which syphilis can attack the heart. Firstly, the disease may attack the aortic valve, producing an aortic insufficiency; secondly, there may be a syphilitic aortitis as observed in this case; thirdly, there may be aneurysm of the aorta due to the syphilis. These processes can occur jointly or separately. In this case we are solely dealing with syphilitic aortitis.

In summary, then, we have again a case of cardiovascular disease with two distinct and separate processes, namely, an old rheumatic lesion with its consequences, and a syphilitic lesion. With the combination of the two, it is not too surprising that the patient developed bizarre and unusual symptoms.

Lilly Suspends Clinical Trial of Carbutamide

Eli Lilly and Company has announced the suspension of the fifteen-month clinical trial of carbutamide, or BZ-55. Carbutamide is a sulfonamide derivative which controls many cases of diabetes when given by mouth.

"We deeply regret that this compound apparently does not meet the rigid requirements for a drug that must be taken throughout life. At the same time, we are grateful that the study of carbutamide was broad enough and thorough enough to uncover its limitations," a Lilly spokesman said.

The Post Polio . . .

(Continued from Page 50)

Conservative treatment is generally unsatisfactory.

Surgical treatment is generally satisfactory.

There are two elements to the deformity; the calcaneus deformity and the valgus deformity.

The calcaneus deformity is generally amenable to treatment by transplantation of muscles to replace the lost function of the triceps surae muscle group. The peroneals, tibialis posterior, flexor digitorum communis longus, the flexor hallucis longus, and in rare instances the tibialis anterior muscle may be used for transplants.

Combination Attack

The valgus deformity is attacked by a combination of a triple arthrodesis and muscle transplants of the foot. At the time the triple arthrodesis is done a wedge of bone should be removed from the inner side of the foot to correct the valgus deformity.

Green's operation as described by Grice in which a bone graft is placed in the sinus tarsae is useful in the treatment of the calcaneo-valgus foot.

It is important to realize that the calcaneus and valgus deformities although they may be analyzed separately are really integral parts of the same deformity. Their treatment is likewise closely linked together.

Deferred Transplantation

Muscle transplantation may be done at an early age. It should be deferred until 18 months or more after the acute attack of poliomyelitis.

It is the consensus of opinion that the triple arthrodesis operation should not be done before the age of eight.

For the last 10 years the author has stabilized the astragalo-scaphoid and subastragalar joints by means of large wires or small pins under direct vision at the time of operation before closing the incision. This technique was described originally by Dr. Guy Caldwell in 1943.

Some personal observations on the author's own cases are given.

Major Medical Insurance Called Key to Modern Health Economics

Major medical insurance was named the key to the problem of modern health care economics by James Andrews, Jr., Director of Health Insurance of the Life Insurance Association of America and Vice-Chairman of the Health Insurance Council before the Pennsylvania Medical Society at its recent annual meeting in Atlantic City, N. J.

Focussing attention on the radically new approach of Major medical coverage to the cost of treatment prescribed by a licensed physician, Mr. Andrews stated that the conventional forms of hospital, surgical and medical coverage were never designed to meet the needs of the long-term patient or the patient requiring a costly surgical procedure or extensive treatment by non-surgical specialists with out-of-hospital nursing care and expensive drugs. The new insurance, through its high benefit limits and its flexibility as to treatment was accomplishing all this and in the field of group insurance was extending its coverage to normal illness by means of a low deductible set to the earnings of the employee.

Benefits Up To $10,000

Major medical expense insurance provides benefits up to a maximum limit of $5,000, $7,500 or $10,000. It has two characteristic features, a deductible amount to eliminate payment of small bills and a co-insurance provision by which the insurance company pays 75 per cent, 80 per cent or more of the expenses of treatment up to the benefit limit of the insurance. As indicated in the recent survey of the Health Insurance Council, major medical showed an advance for the year 1955 of 138 per cent to lead all other forms of health insurance and to provide protection for more than 5.2 million people.

In summing up the coverage and its contribution to the adequate financing of voluntary health care Mr. Andrews said: "One of the most valuable aspects of major medical expense insurance is its flexibility. Just as medical practice has changed in the past decade, there is every likelihood that it will change in the next. By means of major medical expense insurance, protection is available which will keep pace with changing times. Major medical is designed to meet the cost of all types of service needed to restore the individual to health rather than being limited to a specific type of service, such as hospitalization or surgery. Thus, financial pressure to have one type of treatment rather than another, or to go to the hospital when hospitalization is not really needed, is largely eliminated."

Clinical Use Of . . .

(Continued from Page 32)

duction in the necessity for hospitalization, which results in more economical treatment for patients requiring a series of treatment.

Indications

Co^{60} teletherapy has proven its usefulness in all conditions, benign or malignant, located beneath the skin in which radiation treatment is indicated. It has been shown to be most useful in treatment of malignancies of the larynx, intraoral cavity, urinary bladder, lung, and oesophagus. It provides benefit to patients with cancer of the cervix and endometrium. Postoperative or palliative breast cancer treatment has proven beneficial. Palliative treatment in cases of inoperable or recurrent cancer of the rectum is showing promise.

Because of the reduction of undesirable side reactions, palliative treatment can be given to somewhat higher levels and in some patients previously considered to be eligible for palliative treatment only, an effort at permanent control will be possible.

Selectivity Needed

Not all patients should be treated with Co^{60} teletherapy. The radiologist must still select the modality of treatment, after evaluation of each patient, as has always been done in the past. The expected biologic behavior of the tumor, the presence or absence of metastases, the size and location of the tumor, and the general condition of the patient are factors which must be evaluated to determine the type of treatment to be used in each case.

Although Co^{60} teletherapy offers definite advantages, it is not expected to revolutionize the treatment of cancer. Co^{60} teletherapy has proven to be a useful new tool in the armamentarium of the radiologist in the effort to control cancer and provide palliation for those whose disease cannot be controlled.

Fractures Of The . . .

(Continued from Page 53)

fractures of the pubic rami is accomplished by sling suspension.

Buttocks Taped

Fractures of the sacrum can often be reduced by finger in the rectum. The buttocks should be taped together for compression for a few days and patient kept supine in bed. After 2-4 weeks patient may be ambulated, but will need a cushion to sit on such as a rubber doughnut. Without displacement a corset or sacro-iliac sling will suffice plus rubber doughnut to sit on.

Treatment of fracture or dislocation of the coccyx consists of reduction by digital finger when displaced. Rest in bed is usually necessary here and taping the buttocks as above may help or aggravate — trial only will tell. Hot sitz type baths 3-4 times daily initially will often be beneficial. In chronic cases postural exercises should be tried. In general, the treatment of coccygodynia by removal of coccyx should be reserved for selected cases.

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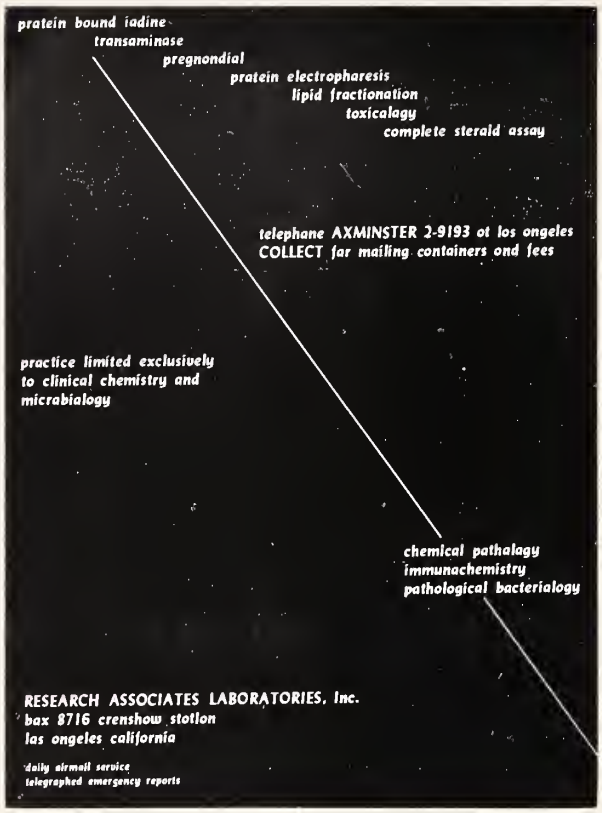

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Southwestern MEDICINE

VOL. XXXVIII FEBRUARY, 1957 No. 2

EDITORIAL

Doctor! Keogh-Jenkins-Now!

By Robert B. Homan, Jr., M. D., El Paso

The following is an excerpt from this column appearing in Southwestern Medicine, March 1953 issue:

"Under the law (Section 165 of the Internal Revenue Code), employers and corporations are allowed to *deduct from taxes any contribution* made by them to certain "qualified" pension plans for their employees — in private insurance companies. These private pension plans are entirely separate from the social security setup. Some 8,000,000 employees (the figure for 1956 is 15,000,000!) are involved in these plans and their employers are enjoying tax deduction on their contribution to their employees future security. Furthermore, the funds contributed by the employer are not taxable as income to the employees. In addition, this special privilege contributes to good employee relations — thus it is valuable beyond its monetary advantages to the employer.

Self-employed Get Shaft

"Not so with the self-employed or professional American citizen. If this person wishes to purchase a pension policy, he must do so with money on which he has already paid all present taxes — that is, from his net income after taxes. In addition, he will pay an income tax on his net gain over his investment if, as, and when he draws disability or pension on his own privately provided protection when such payments begin.

"There are some 11,000,000 self-employed and professional men in this country suffering from this tax discrimination. Thus, the "small business men" of this country are getting a raw deal tax-wise and pension-wise. These little business men provide employment for many million Americans. Included in this group are not only the professions — doctors, dentists, lawyers, engineers, architects, accountants, etc., but also farmers, the owners of the corner drug-store or grocery store, and many other business men who risk their money to make the American dream work. Doesn't it seem logical and fair that they should receive the same tax break that their employees can receive under a private pension plan? Is there a way out of this inequitable situation? There is."

Needle Your Congressman!

Doctor, there was an answer in 1953, in 1954, in 1955 and in 1956! The same answer exists today — if you are prepared to demand consideration from your Congressman and Senators! A revised version of the Keogh-Jenkins bill (H. R. 9 and H. R. 10) has been submitted to the present Congress. Briefly, this bill would permit the deferment of income tax liability on income paid into a restricted retirement fund with a private insurance company. Such deduction may be as high as 10 per cent annually (or $5,000), whichever is the lesser — not to exceed $100,000 in a lifetime. Provisions are made for higher deductions in age groups over 50. All of these figures are based on gross income!

Surely you have long since realized how difficult it is to provide family security and retirement security under our present income tax laws. The law, as it now stands, discriminates against the self-employed. The Keogh-Jenkins proposal would eliminate this discrimination. The American Bar Association is making an all-out effort to get this proposal adopted this year.

You must certainly know by now that your Congressmen and Senators cannot know what you want unless you tell them. Won't you stop *now* and drop them a line asking for support of the Keogh-Jenkins proposal (H. R. 9 and H. R. 10) which provides for equal tax-rights for the self-employed? If you don't do so, you are cutting off your nose to spite your face!

CURRENT THERAPY

Rheumatic Fever*—Diagnosis

By Jack A. Bernard, M. D., El Paso

As there is no specific diagnostic test for rheumatic fever, the various specific tests of hemolytic streptococcal infection have been used as an aid in the diagnosis. The simplest of these, the antistreptolysin-O determination is used to determine the antibody to beta streptococcal hemolysin. A titer of more than 250 units is considered significant. A rising titer is significant and a titer of over 500 units is very significant.

It has been reported that about 85 per cent of the cases of rheumatic fever have a high titer, whereas, for example in rheumatoid arthritis the titer is said to be high in only about 28 per cent of the cases. Less than three per cent of rheumatic fever cases will have a low titer, whereas it has been reported that about 50 per cent of the cases of rheumatoid arthritis will have a low titer.

Titer Varies

It should be noted that in rheumatic fever the titer varies according to the time interval from the streptococcal infection. The titer usually becomes detectable in the second week and then reaches a maximum at four to six weeks, to then gradually decline. Therefore, the time at which the test is made is important and it is up to the physician to interpret the laboratory report in the light of his clinical history, depending upon how long after the streptococcal infection the test is made.

It should be obvious therefore, that the test is not a test for rheumatic fever but a test of recent hemolytic streptococcal infection, and its titer depends upon the time interval from the streptococcal infection. Obviously, a low titer is more helpful in the exclusion of rheumatic fever.

C-Reactive Protein

C-reactive protein is a substance that is not present in the blood of normal healthy subjects, but appears promptly in the course of a wide variety of diseased states when an inflammatory reaction or other type of tissue damage occurs and it disappears when the abnormal process subsides. It owes its name to its property of reacting to form a precipitate with the so called C polysaccharide of pneumococcus.

The technical procedures involved in carrying out the test are exceedingly simple. Equal parts of the patient's serum and rabbit anti-serum to C-protein are mixed in a capillary tube and after appropriate incubation and refrigeration the degree of reactivity is determined on the basis of the amount of precipitate in the tube.

Diseases Listed

Diseases in which the C-reactive protein is found include: Febrile rheumatoid arthritis, gout, subacute bacterial endocarditis, staphylococcus osteomyelitis, a colon type bacillus type infection in children, and myocardial infarction.

The protein is absent in lupus erythematosus, dermatomyositis, scleroderma and afebrile rheumatoid arthritis. It therefore should be helpful in differentiating rheumatic fever from the other collagen diseases mentioned.

The C-reactive protein may be absent in cases of pure chorea, in cases of rheumatic fever where there are subcutaneous nodules only, or where there are only Aschoff bodies in the auricular appendage, or where there is simply prolongation of the PR interval.

Reliable Indicator

Except in these instances, the presence of C-reactive protein in the blood of a rheumatic fever patient is an extremely sensitive and reliable indicator of rheumatic activity, if other pathologic processes can be excluded, such as those mentioned above, and certain traumas, nephrosis, neoplasia, granuloma, and occasionally congestive failure.

In active rheumatic fever with congestive failure the C-reactive protein may be helpful, in that it will be elevated where the sed rate may be normal.

Good Prognostic Sign

The disappearance of C-reactive protein in rheumatic fever is a good prognostic sign. Persistance of the protein in the blood during treatment with antirheumatic agents indicates the inadequate suppression of the inflammatory process.

There are other reactions that are being studied and being evaluated, such as, the diphenylamine reaction which has recently been studied and correlated with the sedimentation rate and signs of rheumatic fever. It seems to be and may prove to be more sensitive than the C-reactive protein test. This and other tests are not yet generally available.

Finally, in the diagnosis of rheumatic fever, the antistreptolysin-O determination is recommended to determine recent streptococcal infection; C-reactive protein determinations are recommended as a test for rheumatic activity.

(To be continued)

*This is the first of a series of articles on Rheumatic Fever by Dr. Bernard.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

(continued)

53. "Acute gaseous cholecystitis is rare and is due to infection of the gall bladder by a gas-forming organism." Gary and Schatzki; *loc. cit.*, P. 1100

54. "It is important that it be recognized that these patients have a severe injury to the cervical spine and that any rough handling of the patient may be followed by additional injury to the spinal cord with an increase in the paralysis; consequently, they are handled very gently. In transportation the head should be maintained in a position of moderate extension and is usually supported by an attendant who sits at the side or head of the litter, while a folded sheet or large towel is placed beneath the back of the neck to maintain normal lordosis in this region.

A slight amount of traction on the head is helpful and sandbags may be placed on either side of the head in order to prevent rotation. The same treatment is carried out when the patient reaches the hospital, and no attempt should be made to get x-rays of the neck until traction has been applied to the head. Temporary traction can be applied by hand or a head sling with a weight of from 5 to 10 pounds hanging over the head of the bed. When the patient is turned he should be rolled like a log, the head and the shoulders being moved together. X-rays can be postponed until the general condition of the patient warrants movement, or they can be taken in bed with a portable machine.

Neurologic examination should be made as soon as possible after the injury, and this should be repeated from time to time, as occasionally these injuries involve hemorrhage into the spinal cord which may cause progressive paralysis which may be relieved by laminectomy.

After the patient's general condition is assessed, it is probably best to apply skeletal traction to the head." Key and Conwell; *"Fractures, Dislocations and Sprains"*; Fifth Edition, 1951; Pages 370 through 378.

Intellectual Association

55. "In the advancement of knowledge, associations of men bringing together a wide variety of talents and experience have played a major part. Here men make contact with other interests and are exposed to a wider perspective which enables them to appreciate the relationships of their own specialized preoccupations to the general body of learning. Here they see excellence and are prompted to emulation. But, above all, it is in such associations that men become conscious of a continuing and underlying community of interest which strengthens each against intellectual isolation and preserves the body of their learning from dissolution." Sir Harold Himsworth; *British Medical Journal;* July 23, 1955; P. 222.

56. "Antihistamines have been a great disappointment in the treatment of cutaneous sensitivities. In urticaria, acute or chronic, they may give temporary relief. Some have a sedative effect, which is of some value in the extremely pruritic patient, but they rarely relieve pruritus nor do they check the eruption. Their extensive use produces side effects and causes allergic reactions in the form of drug eruptions." John G. Downing; *New Eng. Journal of Med.;* Aug. 4, 1955; P. 187.

57. "It is known that massive adrenal hemorrhage occurs in occasional patients with severe epilepsy; indeed, this lesion may even be the cause of death in status epilepticus." Mark D. Altschule; *New Eng. Journal of Med.;* Aug. 4, 1955; P. 191.

Hair as Indication

58. "If there is enough blood to maintain growth of hair on the toes, there is usually enough blood to heal lesions. When the blood supply is insufficient to permit growth of hair on the toes, lesions rarely heal, and amputation is necessary in most of these patients." Meyer Naide; *New Eng. Journal of Medicine;* Jan. 29, 1953; P. 182.

59. "There is grave doubt whether the field of psychiatry is sufficiently developed or whether there is at the moment a series of sufficiently stabilized procedures to permit any but the most fully informed and trained to practice it effectively at anything but a superficial level." Joseph S. Collings & Donald M. Clark; *New Eng. Journal of Med.;* Jan. 29, 1953; P. 187.

60. "Serious or distressing oral lesions are observed much more often with lozenges or troches than with systemic treatment either oral or parenteral, stomatitis or glossitis or both have been noted in 18 per cent of patients receiving antimicrobial agents, including sulfonamides, in these forms." Maxwell Finland & Louis Weinstein; *New Eng. Journal of Med.;* Feb. 5, 1953; P. 221.

Question on Lozenges

61. "There may be some question whether local oral treatment with lozenges or troches is to be recommended for any purpose, because of these reactions, because of the greater danger of sensitization

from these dosage forms and because there is serious doubt about the efficacy of any of these agents given in this manner." Maxwell Finland & Louis Weinstein; *loc. cit.;* P. 221.

62. "The experience of the past few years has indicated quite definitely that the applications to the skin of ointments and oily suspensions of various antimicrobial agents produces the highest incidence of local and systemic sensitization. One should therefore carefully consider in any clinical situation the possibilities of parenteral or oral administration of antimicrobial drugs in the management of various types of infectious skin lesions before embarking on a program of continued application of one or another of the antimicrobial agents to the skin, particularly when the substance is dissolved in an oil or fat." Maxwell Finland & Louis Weinstein; *loc. cit.,* P. 221.

Two Penicillins

63. "Penicillin O will elicit a reaction in more than a third of the patients sensitized to penicillin G and vice versa." Maxwell Finland & Louis Weinstein; *loc. cit.,* P. 222.

64. "It is becoming increasingly clear that the deviations from the principles of child rearing that one has come to accept are less important, so far as their effects on the child are concerned, than the state of mind or the general attitude of the parent toward the child." Harry Bakwin; *New England Journal of Medicine;* Fed. 5, 1953; P. 229.

65. "On the whole the effect of current psychiatric teaching has been to increase parental anxiety, to shake the faith of parents in their own ability to rear children and to undermine parental authority. These are the direct results of such unsubstantiated ideas as that every experience, from the time of birth or even earlier, leaves an indelible impression on the child's future emotional life; that every act of the parents, as it concerns the child, has for him permanent meaning; that a frustration is harmful; and that the process of child development is a delicately balanced and hazardous one, easily deflected and distorted." Harry Bakwin; *loc. cit.;* P. 229.

"POINTERS"

From the Case Records of the Massachusetts General Hospital 1952*

(Continued)

23." Tuberculous peritonitis frequently complicates cirrhosis especially in Asiatics." *loc. cit.;* p. 222

24. "When a goiter is associated with myxedema, a good clinical rule is that one can almost always rule out carcinoma — I say "almost" because there are exceptions to any rule. Carcinoma does not destroy the thyroid gland completely and therefore does not produce myxedema." *loc. cit.;* p. 260

25. "In dissecting aneurysm of the thoracic and abdominal aorta peripheral arterial pulsations may be quite normal because a central channel remains patent." A Composite; *loc. cit.;* p. 328

26. "The neurologic disturbances resulting from dissecting aneurysm are helpful in diagnosis. From observation of a number of these patients three syndromes have emerged: the first is ischemic myelopathy due to interruption of the intercostal arteries; the second is the occlusion of one or both carotid arteries by the dissecting aneurysm, causing sudden hemiplegia, aphasia or coma; and the third, the most common syndrome, is blockage of the circulation to a limb, either arm or leg or both legs, with ischemia of the peripheral nerves. In the last condition the affected limb is pulseless. The occurrence of these neurologic syndromes in conjunction with severe thoracic or abdominal pain should always suggest the diagnosis of dissecting aortic aneurysm." *loc. cit.;* p. 329

27. "Thrombosis of the portal system is found occasionally as a terminal event in portal cirrhosis, but much more frequently when primary carcinoma of the liver is present — in perhaps a fourth of the cases." *loc. cit.;* p. 650

28. "Not all dissecting aneurysms arise from an intimal tear. It has been shown that the primary disease is in the media and that the hemorrhage may be present in the wall of the aorta without an intimal tear." *loc. cit.;* p. 688

29. "We have seen at least three patients who had an elevated alkaline phosphatase, a marked bromsulfalein retention with or without evidence of cholangitis and no clinical jaundice, and yet who at operation showed almost complete obstruction of the common duct from a stone, stricture or tumor. For some reason as yet unknown, almost complete obstruction of a biliary tract occurs occasionally without the development of jaundice." *loc. cit.;* p. 778

30. "The adrenal glands are involved in 20 per cent of the cases of metastatic carcinoma of the breast. Moreover, these metastases are characteristically extensive and bilateral." *loc. cit.;* p. 813

31. "Like those of the adrenal gland, secondary tumors of the pituitary body are not unusual with carcinoma of the breast. The metastases, however, are almost always confined to the posterior lobe, and diabetes insipidus is often manifest." *loc. cit.;* p. 814

32. "Metastatic breast carcinoma may cause relatively acute panhypopituitarism and a picture of Addison's disease." A composite; *loc. cit.;* p. 816

33. "I think we have never failed to make a diagnosis in cases of hemochromatosis by liver biopsy." *loc. cit.;* p. 994

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. — Andrew M. Babey, M. D.

Index To Dr. Andrew M. Babey's Aphorisms

Because of the widespread interest in Dr. Babey's collections of Aphorisms and Memorabilia, the editors of SOUTHWESTERN MEDICINE are presenting annual indexes of the Aphorisms.

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SURGERY

Chlorophyll And Wound Healing. Experimental And Clinical Study

Lam, C. R. & Brush, B. E., Am. J. Surg. 80:204, 1950

Laboratory and clinical studies failed to demonstrate any therapeutic effect of chlorophyll in wound healing.

Henry Ford Hosp.

Clinical Clippings, October, 1950.

TUBERCULOSIS

Aureomycin In The Treatment Of Tuberculosis

Schwartz, W. S., et al., Am. Rev. Tuberc. 61:875, 1950

Aureomycin is apparently of no value in treatment of tuberculosis.

Clinical Clippings, October, 1950.

THE PRESIDENT'S COLUMN

Southwestern Medical Association Called Unique in Many Ways

By Celso C. Stapp, M. D., El Paso

The Southwestern Medical Association, since its inception, has been dedicated to the dissemination of medical knowledge throughout the Southwest. We have been unique in many ways.

There is no medical school within the bounds territorially of the area covered by the Association, which in itself gives the organization a more homogeneous make-up than most, with no one group trying to direct the entire membership.

One of the distinct advantages lies in that the meetings are prepared to give everyone something to take home. It is distinctly noticeable at our meetings that there is a very valuable forum of discussion between two and three doctors in the display areas exchanging their experiences and training.

All schools of thought are represented among the membership, and therefore the invited speakers also represent all schools of thought on all subjects. There are no really large cities within the bounds of the Association, and there are an awful lot of bondocks between each community of our area.

There is practically no professional overcrowding in the area. This binds us together as only Southwestern neighbors are bound, with friendship and kindred spirits being a strong moving factor in the social activities of our meetings.

Traditionally each city holding the meeting tries to outdo previous meetings for good scientific and social program. This year is no exception, and I am sure that each of you will find that out for yourselves when you come to El Paso on October 9 - 11 for our next meeting.

Arrangements are well under way and you can count on a busy and informative time. The Hotel Paso Del Norte will be the headquarters for the meeting. Plan to meet your friends and neighbors at the Southwestern Medical Association Meeting.

Medical Abstract

By Leonard E. Laufe, M. D.,
and John J. McCarthy, Jr., M. D.,
Pennsylvania M. J. 59:914 (Aug.) 1956

The authors used Estan*, an oral androgen-estrogen preparation, consisting of 5 mg. of methytestosterone and .25 mg. of dienestrol for successful suppression of lactation in 200 post-partum patients. 95.5 per cent effective results were obtained in one group.

Therapy was usually begun on the first post-partum day. According to the report, the new Estan treatment consists of three tablets three times daily for the first two days, two tablets three times daily for the following two days, and one tablet three times for one day. This dosage schedule provided an early high blocking hormone level against production of lactogenic hormone while the tapered dose avoids withdrawal bleeding.

There was no fluid restriction but use of brassieres or breast binders was recommended. When untoward effects appeared, in a few cases, they consisted of pain, engorgement, and lactorrhea. These usually occurred on the third or fourth day and subsided within 24 to 48 hours. Lactorrhea was usually painless. No puerperal bleeding occurred.

Review of the literature and clinical experience indicate that this estrogenandrogen combination in the recommended schedule is highly effective in suppressing lactation.

GASTROINTESTINAL DISEASE

Aluminum Hydroxide And Magnesium Trisilicate Plus

Mucin In The Treatment Of 125 Patients With Peptic Ulcer

Hardt, L. L. & Steigmann, F.,
Am. J. Digest. Dis. 17:195, 1950

This well documented presentation concerns use of Mucotin in management of 125 patients with gastroduodenal ulcer. In addition to indicated antispasmodics, sedatives and regulatory diet, all patients received 2 to 4 Mucotin tablets one hour before and after meals and at bedtime. Night pain was controlled by Mucotin alone. All but 12 patients experienced relief of symptoms within seven to ten days. Food sensitivity as demonstrated by skin tests may have been responsible for negative results in these patients. Recurrence rate among patients who cooperated for periods of twelve and twenty-four months was 15 and 18 per cent, respectively.

Clinical Clippings, October, 1950.

ORIGINAL ARTICLES

The Radiological Teaching Film Library with Roentgenological Demonstration of Some Recent Cases

By Peter Zanca, Colonel, MC, USA*, Chief, Radiological Service, Tokyo Army Hospital

The practice of maintaining a radiological teaching film file is an accepted method for preserving and classifying roentgenograms of all interesting hospital cases. Kept current, the film library can be used to furnish useful, up to date records and information for quick review and demonstration of the rare, difficult, complicated and most interesting medical and surgical cases.

Teaching and non-teaching U.S. Army hospitals maintain some standard X-ray film filing system. The method for classifying and indexing disease and the procedures for maintaining a current film library varies from hospital to hospital, in accordance with the local needs and available facilities. In some of the hospitals the selected X-ray films are filed following the Standard Nomenclature of Disease of the American Medical Association. In other hospitals, the method for film filing is based on anatomic, physiologic, radiologic or pathologic classifications of disease. At the Tokyo Army Hospital, a numerical and anatomical index filing system is used.

Library Initiated

The teaching film library was initiated at the Tokyo Army Hospital in November 1945, and presently contains a total of 825 film envelopes.

Roentgenograms from this file have been resorted to for teaching of internes, for demonstrating cases at professional conferences, for review by those medical officers studying for their specialty board examinations, for reference and study in writing scientific papers, and for safeguarding those rare and unusual cases which may have historical interest. Normal and abnormal cases of all types are included in the radiological file.

A list of some of the more interesting cases collected during 1951 and filed in the teaching film library of Tokyo Army Hospital are included in TABLE I. A brief description of these cases follows. Some of the cases herein described are being reported individually, in detail by various members of the hospital staff.

*Tokyo Army Hospital
8059th Army Unit, APO 500
U.S. Army and U.S. Army Hospital,
Ft. Dix, N. J.

Table I.

Case 1. Hereditary multiple cartilaginous exostoses with polyposis of the colon.
Case 2. Leiomyomatosis of the esophagus.
Case 3. Tetralogy of Fallot with dextrocardia and complete situs inversus.
Case 4. Malignant teratoma of the mediastinum.
Case 5. Herniation of the apex of the lung.
Case 6. Retroperitoneal abscess of tuberculous origin.
Case 7. Chicken-pox pneumonia.
Case 8. Marfan's disease with aortic stenosis and abdominal aortic aneurysm.
Case 9. Pericardial cyst.
Case 10. Syphilitic osteitis cranium and facial bones.
Case 11. Hemorrhagic cyst of the kidney.
Case 12. Artefact simulating calcified abdominal mass.
Case 13. Hydronephrosis in bifid kidney.
Case 14. Enormous staghorn calculus.
Case 15. Horseshoe kidney with bilateral hydronephrosis.
Case 16. Soft tissue tumor of ankle joint.
Case 17. Acromegaly.
Case 18. Multiple myeloma.
Case 19. Bronchogenic cyst.
Case 20. Anencephaly.

Case 1.* E. S., a 40 year old white female was admitted with a history of having lower abdominal pain for three months. She has had multiple exostoses of the long bones for many years.

Sigmoidoscopy failed to reveal any evidence of polyp formation.

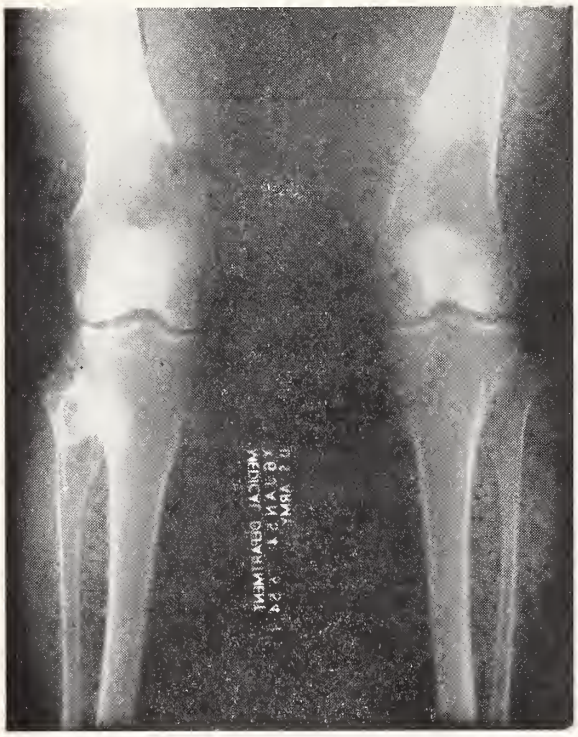
Routine barium enema with double contrast air study of the colon revealed two (2) constant, smooth, rounded, radiolucent areas. Each measured approximately 0.8 cm in diameter and involved the sigmoid colon. The remainder of the large bowel appeared normal. Fig. 1.

Skeletal Survey

Skeletal survey showed the skull to be normally developed, and there was no evidence of osseous

*Case 1 has recently been reported in some detail in the U. S. Armed Forces Medical Journal.

CASE I. Figure 1. Double contrast air study of colon demonstrating two (2) smooth rounded polyps involving the sigmoidal flexure.



CASE I. Figure 2. Multiple cartilaginous exostoses involving the femora, tibiae, and fibulae.

pathology involving the cranium, facial bones, bones of the hands, feet or of the ribs.

Multiple small and large sessile and pedunculated exostoses with cartilaginous tips are seen projecting into the soft tissues bilaterally on the diaphyseal side of the epiphyseal plates of the long bones. The tibiae, fibulae, radii, ulnae and femora are involved. The bony projections extend outward away from the adjacent joints. There is some deformity of the ends of the bones with widening but there is no evidence of shortening. Fig 2. An osteochondroma protruding laterally from the neural arches of L-4 and L-5 and a small sessile exostosis was seen involving the lateral margin of the right ilium. The roentgenological findings are characteristic of an hereditary multiple cartilaginous exostoses.

Colon Palpated

At surgery, the colon was palpated and no polyps could be felt except those in the sigmoid colon. One polyp was excised, a second was fulgurated with coagulating current.

Pathological report was adenomatous polyp, benign.

Post-operative course was uneventful.

Search was made of the available literature and no identical case report could be found. The closest associated pathological condition is that of osteomatosis with polyposis of the colon! In the latter disease the osteomas are formed in membranous bone. In our case the exostoses have their origin in the cartilage cells of the epiphyseal plates.

Case 2. C. S., a 22 year old white soldier had a routine chest film which revealed an abnormal density in the right chest. The patient was completely asymptomatic.

The PA, lateral and oblique views of the chest revealed a smooth, homogeneous, oval-shaped opacity measuring 5 x 9 cms in the posterior mediastinum which projected slightly to the right of the midline. The mass extended from the level of the 6th to the 8th thoracic vertebrae.

On barium swallow the esophagus was seen to be displaced posteriorly and to the right, and a compression defect caused by the mediastinal mass was clearly observed. The involved portion of the esophagus had a lobulated appearance. Fig. 1. There was no inherent pulsation to the mass and a presumptive diagnosis of leiomyoma of the esophagus was made.

Esophagoscopy

Esophagoscopy showed no evidence of pathology of the mucosa and there was no narrowing of the esophagus at the level of the tumor. A thoracotomy was done and multiple leiomyomata were removed from the upper and middle thirds of the esophagus, leaving the mucosa intact with practically no musculature in this area. In all, twelve (12) lesions were

removed. Pathological diagnosis was leiomyomata of the esophagus.

The patient made an uneventful recovery and was sent back to duty.

Unusual Disease

Leiomyomata constitutes an unusual disease condition of the esophagus. The diagnosis has been made preoperatively in only fifteen (15) other cases. A

CASE II. Figure 1. On the oblique view of the chest the esophagus is seen to be displaced posteriorly and to the right. Note lobulated contour of anterior border of the esophagus.

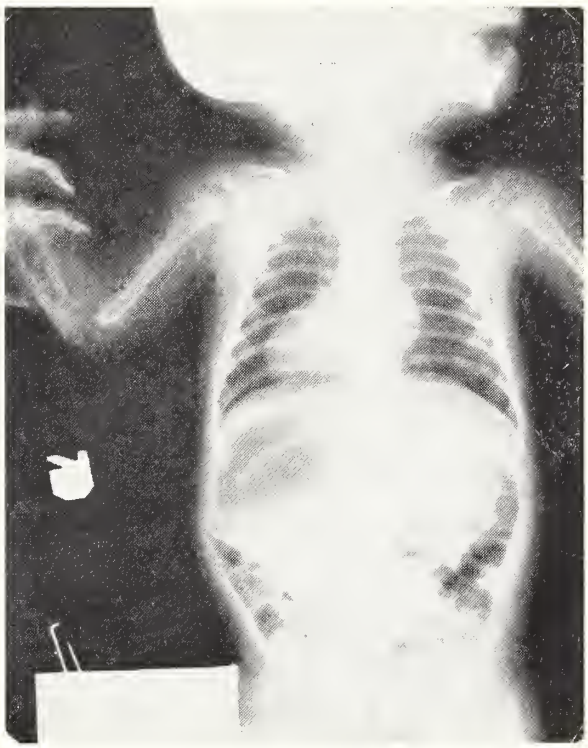
presumptive, preoperative diagnosis of leiomyomata was made in this case because of the lobulated appearance of the involved portion of the esophagus and because the mucosa of the esophagus was found to be intact on esophagoscopy.

Case 3. L. C., a 2 month old white female was admitted to the hospital with cyanosis. She had clubbing of the fingers and toes and a soft systolic murmur was heard along the left sternal border in the 4th ICS. Cyanosis became worse and on the 39th day she became comatose and expired.

The AP view of the chest and abdomen shows a dextrocardia with complete situs inversus of the gastrointestinal tract. The apex of the heart is rounded, the right ventricle is enlarged and the pulmonary artery is hypoplastic. The lung fields are clear. The radiologic findings suggest the presence of Tetrology of Fallot with dextrocardia. Fig. 1.

Autopsy

On autopsy the diagnosis of Tetrology of Fallot with dextrocardia and complete situs inversus was confirmed. The exact number of cases having this form of congenital heart disease with dextrocardia is unknown; however, the presence of congenital cardiac defects in dextrocardia is not infrequent, and cases with septal defects, pulmonic stenosis and transposition of the arterial trunks have been reported.



CASE III. Figure 1. PA chest and abdominal film shows a dextrocardia with complete situs inversus of gastrointestinal tract. Cardiac configuration suggests presence of Tetrology of Fallot.

Case 4. R. B., a 21 year old soldier was admitted to the hospital complaining of cough, exertional dyspnea and chest pain of 3 months' duration. There was no vomiting, hemoptysis, dysphagia or hoarseness. The patient had lost thirty (30) pounds weight and had a persistently high temperature. On physical examination there was complete dullness of left lung anteriorly and of the lower two-thirds posteriorly. No rales were present. The right lung was not remarkable. The heart was shifted to the right and left border of the heart was not demarcated. Sputum and smears were negative for acid-fast bacilli and for malignant cells. On repeated attempts to aspirate fluid from the left pleural space only 100 cc of yellow fluid was obtained.

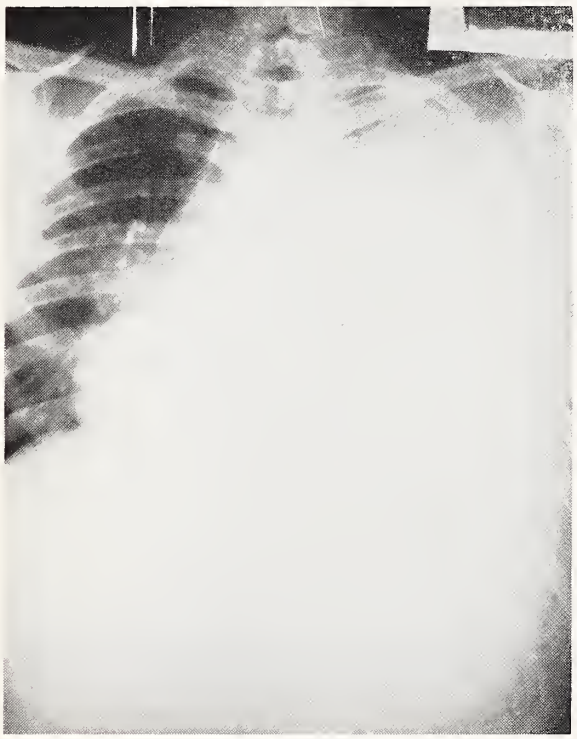
PA chest film shows a massive homogeneous density which occupies practically the entire left lung field, obscures the costo-phrenic angle and causes a

shift of the mediastinal structures to the right. The right lung field is clear. Fig. 1.

The lateral chest film showed the posterior costophrenic angle to be clear.

Thoracotomy

A thoracotomy was done and a large infiltrative tumor mass was encountered which was partially removed. The pathological report revealed a malignant teratoma.



CASE IV. Figure 1. PA chest film shows massive homogeneous density involving left lung field area which causes a shift of the mediastinal structures to the right.

A short time following surgery the patient expired.

The diagnosis of mediastinal tumor mass rather than massive pleural effusion can be made in this case from the lateral chest film which demonstrated a clear posterior costo-phrenic sulcus.

Case 5. H. L., a 30 year old white soldier had a routine chest film taken because of persistent dry cough. The patient gave a history of having been in an automobile accident some ten years previously.

On the routine chest film a slight shift of the trachea was noted, otherwise the chest was negative.

A fluoroscopic examination was done and the radiologist found that the apex of the right upper lobe projected above the clavicle.

CASE V. Figure 1. Lateral view of lower neck region demonstrates prolapse of the apex of the right upper lobe through thoracic inlet.

A lateral view of the lower neck region was taken during the Valsalva experiment and a herniation or prolapse of the apex of the lung through the thoracic inlet on right side was clearly demonstrated. Fig. 1.

A surgical repair was accomplished and the patient was returned to duty.

Herniation of the lung constitutes one of the rarer complications following trauma.

Case 6. H. T., a 33 year old Ethiopian officer was admitted to the hospital with a swelling of his left abdominal region which had been getting bigger for the past month. His general health was good and he had no other complaints. Laboratory work revealed a persistent elevated sedimentation rate and a ++++ Wasserman. Plain films of the abdomen were taken. A KUB, IVP and retrograde urographic examinations, GI series, barium enema and skeletal survey were done. Routine chest film was negative.

Plain film of the abdomen revealed an opacity which occupied the entire left abdominal region which obscured the shadow of the kidney on this side and partially obliterated the psoas muscle shadow. No free intra-abdominal fluid could be demonstrated.

The IVP examination showed satisfactory renal function bilaterally. However, on the left side the renal pelvis was displaced upward and was seen lying in a horizontal plane. The ureter on the left

CASE VI. Figure 1. Retrograde pyelographic examination with catheters in place demonstrate the marked medial displacement of the left ureter by the large intraabdominal mass.

side was displaced medially beyond the midline of the abdomen.

The retrograde pyelographic examination clearly demonstrated the deviated ureter and the displaced renal pelvis. Fig. 1.

We were unable to dissociate the presence of a tumor mass originating from the inferior pole of the kidney.

Barium Enema

The gastro-intestinal series and barium enema examinations showed anterior displacement of small bowel loops and of the descending colon. This observation suggested the presence of a retroperitoneal mass.

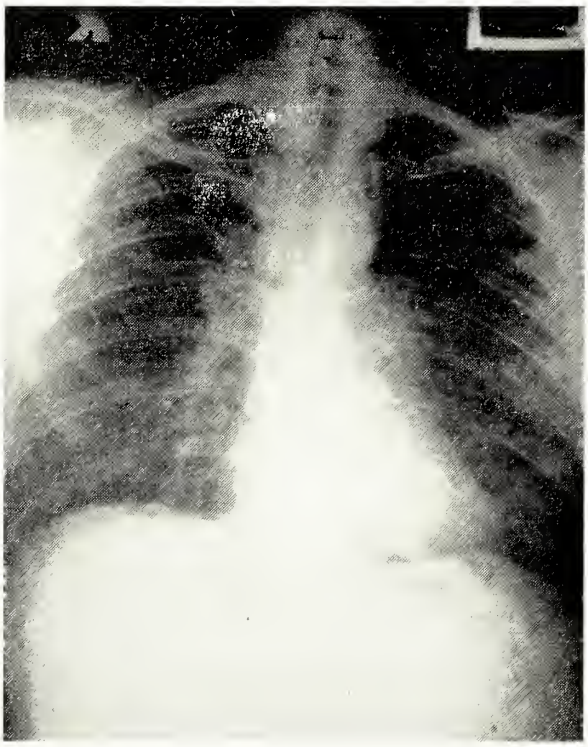
Skeletal survey showed a destructive process between T-12 and L-1 with narrowing of the disk interspace. This finding was consistent with spinal tuberculosis. There was no paravertebral abscess formation and the remainder of the skeleton was normal.

An exploratory operation of the left flank was done and a large fluctuant tumor mass found. Three thousand (3000) cc of purulent material was removed and microscopic study revealed tuberculous abscess formation.

A Hibbs spinal fusion was done. The patient became ambulatory and was returned to Ethiopia.

This case presented itself as a diagnostic problem, however, the presence of an associated Pott's disease with retroperitoneal mass should suggest tuberculous abscess formation.

Case 7. W. B., a 31 year old white soldier was admitted with a rash on his face and chest with chills and fever. On physical examination a maculopapular rash and vesicular lesions were seen on the back of



CASE VII. Figure 1. Routine PA chest film shows a diffuse, mottled infiltration scattered throughout both lungs.

his chest, upper arms, face, neck and scalp. A few coarse rales were heard, otherwise remainder of the physical examination was not remarkable.

A chest X-ray was taken which shows a diffuse, mottled infiltrate scattered throughout both lungs. Fig. 1.

Sputums, smears and cultures for Tb bacilli were negative. The patient ran a low grade temperature during his ninety-five (95) day hospitalization period at which time he was discharged from the hospital. On discharge the chest X-ray film showed almost complete clearing of the infiltrative process.

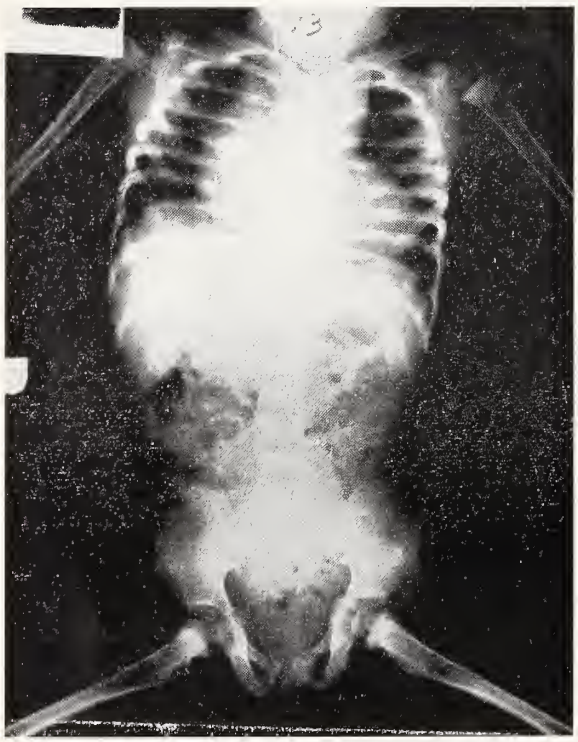
The X-ray findings in this case are characteristic of primary varicella pneumonia. We have seen two (2) cases of chicken pox pneumonia in the past year.

Case 8. D. D., a 2 year old white female had been diagnosed in various stateside hospitals as having Marfan's syndrome. She had been admitted to the TAH at six (6) different times. On her last admission her chief complaints were vomiting and fever. Past history revealed that she had been born at term. At birth a strabismus was present and she had skin contractures of the middle fingers bilaterally. Her fingers and toes were unusually long and spindle shaped. Her weight gain was slow. X-rays taken at the age of three (3) months demonstrated deformities of the skull and spine. At about one (1) year cardiac enlargement was noted; and on last admission she had a murmur over the aortic area. In addition a pulsating abdominal mass measuring 6 x 8 cms was palpated.

Roentgenograms

The following roentgenograms were taken:

X-ray film shows the aortic arch to be dilated. The heart is boot-shaped and the left ventricle is enlarged.



CASE VIII. Figure 1. Note boot-shaped heart, a dilated aortic arch and enlargement of the left ventricle. There is no notching of the ribs. Partially calcified, well circumscribed, oval-shaped shadow in lower mid-abdominal region which extends from L-2 to L-5 lying in the retroperitoneal space is seen.

The lung fields are clear and there is no evidence of notching of the ribs. Impression is that of congenital heart disease with coarctation of the aorta. A large oval-shaped mass measuring 6 x 8 cms in the mid-abdominal region extending from the levels of L-2 to L-5 was seen. There were streaks of calcium about the borders of the mass and the roentgenological picture suggested the presence of an aneurysm of the abdominal aorta. Fig. 1.

Films of the lower extremities showed elongation of femora, tibiae and fibulae and hyperflexion deformities of the middle fingers.

The patient was found dead in bed on the third hospital day.

An autopsy was done and the pathological diagnosis of Marfan's syndrome and ruptured abdominal aortic aneurysm was made. In addition, aneurysm of the ascending aorta, hypertrophy left auricle and ventricle, coarctation of the aorta and severe atheromatosis of the aorta were present. Oxycephaly, arthrogryposis and arachnodactly was also found.

Case 9. C. N., a 26 year old white soldier was admitted to the hospital because of a tumor mass which was seen on a routine chest film taken on application for Officers' Candidate School. The patient was entirely asymptomatic.

The PA chest film shows an oval-shaped, smooth homogeneous tumor mass which measures 4 x 6 cms and which obliterates the left cardiophrenic angle. The tumor mass extends anteriorly to about 2 cms from the anterior chest wall. The remainder of the lung fields are clear and the cardiac silhouette is within normal limits.

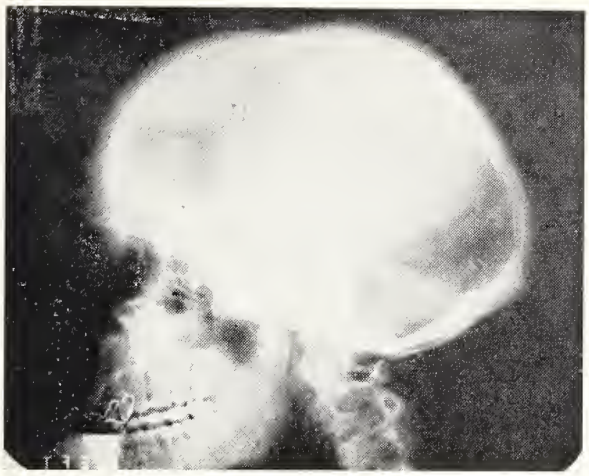
In a differential diagnosis the possibility of pericardial cyst, lipoma, teratoma or diaphragmatic tumor were considered.

A thoracotomy on the left side was done and a mediastinal tumor mass was removed. The pathological report was that of pericardial cyst. The patient had an uneventful recovery.

This case is interesting in that the location of an anterior mediastinal tumor mass can be made from the single PA chest film by the so-called "silhouette sign." On this view, the shadow of the mass obliterates the cardiac border which indicates that the tumor lies anteriorly in the chest.

Whenever a tumor shadow overlaps the border of the heart, the mass is assumed to be located posteriorly in the mediastinum. A lateral view of the chest was taken and clearly shows the mediastinal mass lying anteriorly.

Case 10. A. D., a 25 year old colored soldier was admitted to the hospital complaining of vertigo, headaches and of a soft tissue swelling involving the right side of the face and forehead. Physical examination revealed an exophthalmos on the right side in addition to the soft tissue swelling of the face and forehead, otherwise the examination was negative. Alkaline phosphatase and calcium levels were normal. Two years previously the patient had been treated for



CASE X. Figure 1. Skull film shows a marked sclerosis and thickening of the right frontal bone, sphenoid bone and malar bone resulting in a deformity of the right orbit.

a luetic infection with bismuth and mercury. This course of therapy was not completed and on admission the patient had a ++++ Wasserman.

Routine skull films were taken which revealed a condensing osteitis of the calvarium and of the facial bones particularly on the right side. Fig. 1.

Massive doses of penicillin were given and the soft tissue swelling of the face and forehead completely cleared. Follow-up roentgenograms of the skull were taken three months following this course of treatment and there was no demonstrable change in the sclerotic bony changes.

This case was a diagnostic problem. Fibrous dysplasia, juvenile Pagets' disease, leontiasis ossea, meningioma, and chronic pyogenic osteomyelitis were considered as possible cause of the disease process.

The diagnosis of syphilitic osteitis in this case appears to be consistent with the history, physical findings and subsequent response to massive doses of penicillin.

Case 11. J. P., a 24 year old white soldier was admitted to the hospital complaining of a dull ache in the left flank. Eight years previously the patient had injured his left kidney.

A plain KUB film was taken which revealed the presence of an oval-shaped cyst measuring 6 x 6½ cms in the left upper quadrant overlying the kidney. The cyst-like mass has a calcific ring and centrally has a mottled or flaky calcification. The lateral view showed the retroperitoneal location of the cystic mass.

On the IVP examination there was satisfactory excretion of dye at 5 minutes. The collecting urinary system on the right side appeared normal. On the left side dye was seen only in the inferior half of the collecting system. There was no dye in the cystic area and no dye was excreted from the superior pole of the kidney.

Diagnosis made from the history and X-ray findings is that of hemorrhagic cys of the kidney.

This patient refused surgery and was discharged from the hospital to a duty status.

Case 12. R. S., a 31 year old white soldier was admitted to the hospital for medical observation for a suspected herniated nucleus pulposus.

Roentgenograms of the lumbosacral spine were normal.

On the plain KUB film a mottled, oval-shaped shadow of increased density measuring 7 x 7½ cms was seen in the right upper quadrant overlying the kidney.

On the IVP examination the oval-shaped density was again seen, however, there was satisfactory excretion of dye bilaterally and there was no distortion of the collecting urinary system on the right side.

A retrograde pyelographic examination was done which failed to show any kidney abnormality. The previously described oval-shaped density was not seen on this examination.

Further investigation revealed that a technical error had been committed by the technicians and that some dye had been spilled on a towel which cast the oval-shaped shadow.

Comparison with shadow produced by the hemorrhagic cyst in previous case is interesting because of similarity of shadows.

Case 13. A. A., a 23 year old soldier was admitted to the hospital complaining of pain in the left flank. There were no urinary symptoms.

A plain KUB film was taken and showed a smooth rounded homogeneous opacity measuring 8 cms in diameter overlying the upper pole of the left kidney. The lower half of the left kidney shadow appeared normal. The nature of the opacity was undetermined and the possibility of a phantom tumor mass was entertained.

An aortogram was done which demonstrated a bifid pelvis and ureter on the right side. On the left side the super minor calyces were faintly visualized and the middle and lower calyces, pelvis and ureter appeared normal.

The retrograde pyelographic examination demonstrated a bifid kidney pelvis on the left side with hydronephrosis of the upper collecting system. The lower half of the kidney and its collecting system appeared normal.

A nephro-ureterectomy of the upper left hydronephrotic bifid kidney was done and the patient made an uneventful recovery.

Hydronephrosis is sometimes suggested on the plain KUB film and demonstrated by a shadow of increased density. In this case the shadow was smooth and rounded and simulated a tumor mass.

Case 14. Patient, a 23 year old white soldier complained of dull ache in his left flank which continued for 2 weeks duration. On palpation he could feel a hard stony mass. He had no urinary symptoms and was admitted to the hospital for work-up and evaluation.

Plain KUB film demonstrated a huge staghorn calculus on the left side.

On the IVP examination there was satisfactory excretion of dye from the right kidney. There was no function on the left side and the staghorn calculus is seen to occupy almost all of the kidney.

A nephrectomy on the left side was done, the kidney was atrophic and the staghorn calculus weighed 275 grams.

This is one of the largest staghorn calculus ever seen by the operating urologist and by the author of this paper.

Case 15. E. M., a 28 year old white soldier was admitted to the hospital complaining of flank pain, frequency, urgency, and nocturia. A G. U. work-up was done.

The plain KUB film showed the right kidney outline to be normal. The left kidney shadow was not clearly demonstrated.

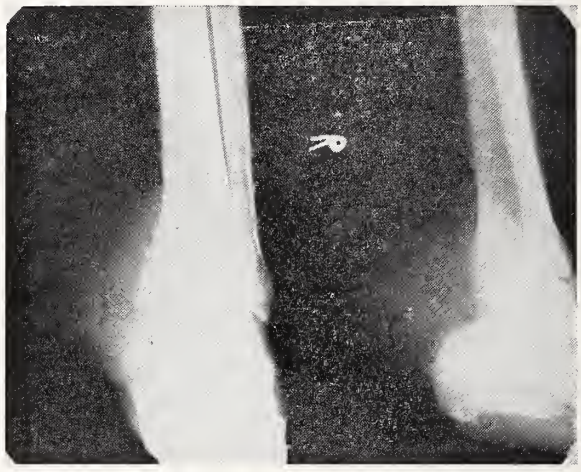
IVP examination demonstrates the presence of a horseshoe kidney with bridging of the lower poles in the midline and bilateral hydronephrosis. The hydronephrosis apparently was due to a uretero-pelvic obstruction. A translumbar aortogram was done which identified two large sets of renal vessels on both sides. The nephrogram subsequent to the aortogram visualized the kidneys and it was seen that the isthmus was of moderate size. No major vessels were seen approaching the isthmus.

The isthmus was surgically divided, and the lower poles of kidneys rotated laterally and fixed in normal position. There was a ureteral pelvic obstruction on the right side which was treated by a von Lichtenberg type of pyeloplasty. No pyeloplasty was necessary on the left side.

Post-operative course was uneventful and subsequent IVP examination showed a decrease in the size of the hydronephrosis with excellent drainage. Asymptomatic the patient was returned to duty.

Case 16. A. M., a 21 year old white soldier was admitted with a swelling of the medial and posterior aspect of the right ankle. The tumor mass had been present for three months and was getting larger. The patient said that he injured his right ankle about three years previously at which time there was swelling which gradually subsided. On examination the tumor mass was slightly tender and fixed to the underlying structures and skin. It did not reduce in size on elevation of the extremity.

X-ray of the ankle shows a large, smooth, homogeneous, oval-shaped soft tissue mass measuring 8 x 12 cms about the medial and posterior aspects of the right ankle. There is no calcification in this mass and no bone or joint involvement can be identified. Fig. 1. The possibility of a synovioma was entertained. Chest was normal and skeletal survey was otherwise negative.



CASE XVI. Figure 1. AP and lateral views of the right ankle show a large smooth, non-calcified, homogeneous soft tissue mass about the medial and posterior aspects of the ankle. No bone or joint involvement seen.

The mass was surgically removed and microscopic examination revealed a pleomorphism of cells. There was a difference of opinion as to the exact type of tumor. Several members of the pathological staff were of the belief that the tumor was of sarcomatous origin; and, synovial sarcoma, fascial sarcoma and fibrosarcoma were considered. Benign giant-cell tumor, neurilemmoma and desmoplastic reaction were also entertained.

The patient's post-operative course was uneventful and he was returned to duty with instructions for regular follow-up.

Case 17. E. T., a 36 year old white female was admitted to the hospital complaining of generalized weakness and recurrent abdominal pains of several months duration. Two weeks prior to admission she was told she had "acromegaly." She had visual blurring but no loss of vision. There were no headaches. Amenorrhea for the past year, with no hot flashes, was present; and progressive enlargement of the

hands, feet, skull and face for several years was noted. Physical examination also noted a generalized increase in the body hair with slight male distribution. There was an upper dorsal kyphosis and scoliosis.

Skull films revealed a marked enlargement of the sella turcica with erosion of the floor and thinning of the posterior clinoid processes. The AP diameter of the sella turcica measures 20 mms and the depth equals 15 mms. There is generalized thickening of the calvarium and an exaggeration of the vascular channels of the skull. The frontal sinuses are large. The mandible is not significantly prognothic.

X-ray of the hands showed spade-like deformities with prominence of the tufts of the distal phalanges.

Treatment Recommended

The tumor board recommended treatment of the pituitary gland with external radiation.

A plastic head cast was constructed, and, with markers and a back pointer five ports were mapped so that the X-ray beam could be precisely localized to the pituitary region.

Using 200 KVP, 10 MA, 0.5 mm CU + 1.0 mm Al; 1.0 mm Cu HVL and 50 cm TSD, five (5) cm diameter circular ports were used. Port 1. right temporal, Port 2. left temporal, Port 3. anterior frontal, Port 4. middle frontal, Port 5. vertex. The patient was given a tumor dose of 2500 r in 30 days time.

Upon completion of treatment she returned to her home station.

Eight months following X-ray therapy the patient returned to the hospital for a check-up. At this time she had no complaints. The visual fields were normal and the abnormal soft tissue and bone growth was apparently arrested.

Case 18. O. W., a 39 year old white female was admitted to the hospital with a history of progressive proptosis of the left eye of six weeks duration. Her general health was good.

Roentgenograms of the skull and spot films of the left orbit revealed a destructive process involving the left frontal bone and the supraorbital ridge. Skeletal survey otherwise was negative for bone pathology.

A biopsy of the left frontal bone was done, and the pathological report was that of plasmocytoma. Sternal marrow puncture revealed numerous myeloma cells.

This patient was considered to have multiple myeloma and was treated with urethane. Following this type of therapy there was some recalcification of the involved areas in the frontal bone and supraorbital ridge. Her general condition showed slight improvement. Later she was given cortisone and died in six months time in congestive failure.

This case is interesting in that the only roentgenological findings were localized to the skull.

Case 19. P. S., a 6 year old white female was transferred to our hospital with a mediastinal tumor mass. She was completely asymptomatic and the tumor was found on a routine chest film.

On the PA and lateral chest films a slightly lobulated oval-shaped homogeneous tumor mass measuring 3 x 6 cms and involving the superior and posterior mediastinum was seen. The tumor mass extends from the midline into the right hemithorax with its lateral border reaching the midzone of the lung field at the level of the 2nd rib anteriorly. Posteriorly the mass extends from the level of T-3 to T-6. The mediastinal structures are in the midline, the cardiac silhoutte is within normal limits and the lung fields are clear.

On barium swallow the tumor mass was seen to produce an impression on the esophagus.

Thoracotomy

A thoracotomy was done and the mediastinal tumor mass was removed. Pathological report was that of a bronchogenic cyst. Patient had an uneventful recovery.

The diagnosis of mediastinal and pulmonary disease in a child always poses a problem and many conditions must be considered in a differential diagnosis. The following conditions were considered and ruled out in this case: 1. Paratracheal lymphadenopathy — tuberculous, lymphoma, sarcoid disease; 2. Bronchogenic cyst, enteric cyst, teratoma; 3. Enlargement of the thymus gland; 4. Neuroblastoma; Mycotic disease; 6. Primary or metastatic tumor.

Case 20. S. T., a 21 year old Japanese female had a routine plain film of the abdomen taken during her last month of pregnancy.

The plain film shows a single intra-uterine pregnancy in cephalic presentation. In place of the normal skull, a mass of bones are seen in the maternal pelvis. This is characteristic of an anencephaly.

An anencephalic monster was delivered.

We have seen three anencephalic monsters in the past year, and there are now four such cases in our teaching film library.

Summary

A series of recent, unusual and interesting, films taken from the radiological teaching film library of Tokyo Army Hospital have been presented. Some of these cases are being reported, individually and in detail, by various members of the hospital staff.

The radiological teaching film file is readily available in all U. S. Army hospitals. It is recommended that greater use of this library be made by all medical personnel. The film library not only preserves X-ray films but furnishes records and information for quick and efficient review of the most interesting and instructive hospital cases seen through the years.

Further Comments on the Treatment of Poisonous Animal Injuries

By Frederick A. Shannon, M. D., Wickenburg, Arizona

A rather puzzling publication in the pages of *Southwestern Medicine,* constituting a plea for better management of poisonous animal injuries, has recently appeared under the signature of Dr. Robert J. Antos.[1] Although published under "Original Articles," the only contribution of an original nature was the tabulation of pain medications given by different Arizona physicians to 96 victims of poisoning from black widow spiders, scorpions, or "other poisonous animals," presumably arthropods. Sedatives, calcium salts, antihistamines, and cortisone are mentioned as being used in the treatment of 35 other cases of arthropod poisoning.

These data, as they stand, are of little value, as no mention is made of the per cent of fatalities, whether other treatments were combined with the above sedatives and analgesics, or whether the 24 injuries supposedly involving scorpion stings were inflicted by the large number of relatively innocuous scorpions found in the state or by the more venomous *Centruroides sculpturatus.* Dr. Antos opines only that meperidine and morphine should not have been used. In the lack of any data concerning morbidity, this opinion may be removed from objective consideration and be classified as highly personal in nature.

First Sentence Quoted

The first sentence in Dr. Antos' article states that: "The currently accepted methods of treating bites or stings of poisonous animals evolves around two principles: The relief of pain and sedation." Most physicians would agree that the treatment of animal envenomization revolves around neutralizing and removing or delaying the absorption of venom and that relief of pain and sedation are secondary considerations. I for one certainly do not send my snakebite victims home after giving them morphine and Equanil.[R]

Opinions Rehashed

The remainder of Dr. Antos' article consists of rehashing Professor Stahnke's[2] opinions concerning the use of cryotherapy in the treatment of animal envenomization. Dr. Antos states that the LD 50 of snake venom is greatly lowered for experimental animals if meperidine is used in the treatment. The only authority cited for this rather questionable statement is "personal observations of Prof. Stahnke." There is nothing in the medical literature based on animal experimentation to show that this is true.

Prof. Stahnke has published data[3] purporting to show that meperidine exerts a synergistic effect with the venom of the scorpion, *C. sculpturatus.* The author has offered a criticism[4] concluding that Stahnke's data proved nothing, as he gave overwhelming doses of meperidine to lethally or sublethally envenomized rats. Prof. Stahnke has published a more refined reiteration of the same principle.[5] The author has in press a criticism of this based upon rather similar objections.

Rebuttal Offered

Dr. Antos offers a rebuttal to "several loud outcries" against the use of cryotherapy by claiming that:

"1) The chilling of the body prior to surgery is now an accepted procedure.

2) The freezing of the skin to stony white hardness for skin planning [sic] or abrasion is now an accepted procedure.

3) The exposure of animal tissues to freezing temperatures (ice water & CO_2 snow) both with and without tourniquets or other circulatory obstructions, did not in our hands, produce more than temporary injury of the nature of a first, or mild second degree burn . . . ."

No Antecedents

Inasmuch as Dr. Antos offered no antecedents, and since most of his rebuttal is apparently directed against my protests[6], it would be well to clarify just what his three points were before answering the rebuttal. In the pages of this journal (*Ibid.*) I have previously objected vigorously to proposals of Prof. Stahnke that a snake-bitten extremity have a bone-tight tourniquet placed around it and kept there until the extremity had been immersed in ice water for five minutes.

The naked extremity, according to Stahnke, was then to be kept immersed in this concoction for 14-20 hours or longer, during which time the surface temperature of the extremity would drop to 4-7° C. I pointed out that adequate proof was available from army records that thousands of cases of immersion extremity had resulted from exposure to cold water. I also pointed out that freezing of the superficial tissues with ethyl chloride for 30 minutes was dangerous to these tissues and that such treatment was utterly futile for bites of rattlesnakes, as the freezing was not deep enough to slow the action of the venom.

Interesting Point

Dr. Antos' first point is interesting and true, but it has nothing to do with the subject. I have repeatedly pointed out in lectures and even stated in the May, 1956, issue of *Wildlife Sportsman*[7] that the practice of chilling the human body to a temperature of 75 degrees for two or three hours for surgery has nothing in common with lowering the temperature to 4-7° C. for 14 hours. As is well known, heat may be beneficial for certain forms of cellulitis in a hand, but no one would suggest boiling the extremity in oil.

Second Point

Dr. Antos' second point again suffers in comparative values. Nearly every physician uses ethyl

chloride in his office for temporarily freezing tissues preparatory to minor surgical procedures. Continued application of ethyl chloride to the point of frost formation is not maintained for one-half hour. The author chose the relatively avascular area of the left ankle to try the latter treatment. The area involved was just posterior and superior to the medial malleolus, well within the range of a striking snake.

I did not quite have the courage to use the area of the medial malleolus itself, as it is even more avascular. Even so, considerable skin sloughing occurred in a circle with a diameter of three inches, and one draining sinus was open for three weeks. The depilatory effects were complete and have been maintained for over two years. The scar was not sensitive to tactile stimuli for more than six months. It is fortunate that the additional ischemia of the powerful enzymatic rattlesnake proteolysins were not present.

Third Observation

The third observation of Dr. Antos is simply contrary to fact. The author did see slides of one of Prof. Stahnke's cats that had suffered a gangrenous slough following ice treatment after the injection of venom. Allen[8] found that refrigeration retarded the local destructive action of venom, but after tourniquet release and cessation of refrigeration the "seemingly normal tissues near the injection site begin to turn dark, and after several hours the gangrene is as extensive as in untreated animals, or even more extensive." He concludes that "Local refrigeration is of no practical value, unless sometimes as an anesthetic."

Cryotherapy Rejected

Wood[9] rejects cryotherapy *"in toto"* and bases part of his objections on Stahnke's own data. Wood noted that in 200 cases of poisonous snakebite in Virginia, only four instances of sloughing occurred. He notes "Persisting edema, delayed wound healing, wound abscess, and sloughing . . ." were present in the six cases of snakebite reported by Stahnke[2] as receiving some form of cryotherapy. Wood feels that the six cases treated by the Stahnke method had a course less satisfactory than similarly envenomized patients in Virginia treated by other methods.

He reports on a case receiving cryotherapy in which the use of the cold did not delay absorption of the venom, and "the patient stated that in his opinion he had far greater suffering with this new method than he had had in his two accidents" which were treated by Jackson's[10] mechanical methods. Wood's findings that cryotherapy failed to delay absorption are similar to mine.[6]

The more painful aftermath of the ice treatment is similar to that suffered by individuals in Tucson and San Antonio treated by cryotherapy. The author[11] mentions a case of a man suffering 50 per cent disability of his arm from immersion extremity sustained as a result of eight hours' exposure to ice water following a spider bite. A case of snake bite being treated with cryotherapy in the Maricopa County Hospital, Phoenix, in August of 1956 had extensive pedal gangrene on an area of perhaps nine square inches.

Bit of Humor

A bit of humor was injected into Dr. Antos' article with the observation that "Dr. Stahnke and his workers went even further and immersed rat tails in ice water at the freezing point for periods of a week or more, and the animals displayed no tissue necrosis." As early as December of 1954, before the International Symposium on Animal Venoms at Berkeley, California, and in the presence of Professor Stahnke, I stated[11]: "A warning should be advanced that further experiments with the usual laboratory animals are useless and dangerous. It is possible to submerge a whole alligator under cold water all winter with no deleterious effects.

Rats' tails and cats' feet may be subjected to inclement weather for long periods of time, but is understood that a barefooted man could not be subjected to the same treatment with equal impunity." Even Dr. Antos' conclusions on Prof. Stahnke's rats' tails do not coincide with mine. Furthermore, I heard, from a worker in the experiment, that sloughing did eventually occur. If so, Prof. Stahnke as well as myself must have been surprised. Not so Prof. Durwood Allen[12] who reports that shortening of animal tails does occur in extremely cold weather. This does not alter the fact that immersion extremity as such has been produced in no animal except the human.

In view of the above, reports concerning damage from ice water and the failure of same to alter the course of the poisoning render a *priori* Dr. Antos' statement: "would it not be better to have a little scar than suffer a death? Would they condemn vaccination or removal of skin for grafting just because they produce tissue damage? I think not!" I think not, too, if Dr. Antos' queries were not *argumentum ad verecundium*. I might add that most victims of snake bite recover, even if no treatment is instigated. And usually minus tissue sloughs.

Conclusion

In conclusion it may be stated that the opposition to cryotherapy is not the incantations of witch doctors against a modern Semmelweiss. It is the tried and proved methods of a Dudley Jackson combined with judicious use of antivenin and other supportive measures as opposed to an inadequately worked out method of demonstrable harm. Dr. Antos has taken data obtained from the use of notoriously cold-resistant laboratory animals and has injudiciously transferred it in the name of cryotherapy to equally notoriously cold-sensitive bipeds.

The consequences have frequently proved to be disastrous. Cryotherapy would be at best only an adjunct to more necessary supportive measures. Prolonged exposure to cool, not necessarily even cold, water has proved, under natural field conditions, to have resulted in so many cases of immersion extremity that army physicians have had to be specially trained

(Continued on Page 122)

MEETINGS

Texas Medical Association President To Address District One Meeting

Dr. M. O. Rouse of Dallas, president of the Texas Medical Association, will be the principal speaker at the annual meeting of District One of the Texas Medical Association in Pecos Tuesday, Feb. 12.

Also to address the organization will be Lincoln Williston of Austin, executive secretary of the Texas Medical Association. The meeting will be held in the Pecos Valley Country Club with registration beginning at 9:30 a. m.

The complete program is as follows, according to Dr. E. W. Schmidt, president:

10:00 **Dr. Willard W. Schuessler, El Paso,** "The Management of Acute Trauma".

10:45 **Dr. Lincoln Williston.**

11:00 **Dr. R. F. Boverie, El Paso,** "The Use of X-Ray in Gynecology".

12:00 Luncheon for Doctors and Wives at Country Club with Dr. Rouse as guest speaker.

2:00 **Dr. J. E. Miller, Dallas, and Dr. John Goode, Dallas,** "Cancer of the Thyroid", a panel discussion.

3:30 Presentation of case and discussion by the El Paso County Medical Society's Tumor Clinic.

4:30 **Dr. Willard W. Schuessler, El Paso,** "Scalp Defects".

5:00 Business Meeting.

There will be a ladies' tea and meeting to follow the noon luncheon. At 7:30 p. m. there will be cocktails and buffet luncheon in the Pecos Valley Country Club.

Other officers of the organization are Dr. H. D. Garrett, El Paso, vice-president, and Dr. John P. Dunn, Pecos, secretary-treasurer.

AMEBIASIS

Treatment Of Amebiasis With Bacitracin
Most, H., et al., J.A.M.A. 143:792, 1950

Parasitologic and clinical response to oral bacitracin therapy occurred in the majority of 51 patients with amebiasis of varying severity. "Use of this antibiotic alone or in combination with other amebicidal drugs should materially increase the probability of cure in any given case."

N. Y. U. College Med. &
N. Y. Med. Clin., V. A.

Clinical Clippings, October, 1950.

International College of Surgeons to Hold Tenth International Congress in Mexico City, February 24-28

The International College of Surgeons extends a cordial invitation to all physicians, medical personnel and their friends to attend its Tenth International Congress in Mexico City, February 24-28.

The meeting is being held at the invitation of His Excellency Don Adolfo Ruiz Cortines, President of Mexico. It will combine an excellent scientific program by outstanding surgeons of the world with an opportunity to enjoy the show places of Mexico.

Four days will be devoted to the scientific program, to be presented at the University of Mexico. This will cover all phases of surgery. Blocks of rooms have been set aside in Mexico City's finest hotels for those attending. Social functions have been scheduled. For those who wish to see something of the country, two post-congress tours have been arranged.

In view of the large attendance which is expected, and the shortness of time, reservations should be made at once. To simplify the making of arrangements, the International Travel Service, Inc., Palmer House, Chicago 3, Ill., has been chosen to handle registrations for the congress, hotel reservations and travel. Inquiries for further information should be directed to the International Travel Service, Inc.

Coming Meetings

District One, Texas Medical Association, Pecos, Texas, Feb. 12.

International College of Surgeons, 10th International Congress, Mexico City, February 24-28.

Temple Div., Univ. of Texas, Temple, Texas, March 4, 5, 6.

American Academy of General Practice Scientific Assembly, March 25-28, 1957, in Kiel Auditorium, St. Louis.

Texas Medical Association, 90th Annual Session, April 27 - May 1, 1957, Dallas. Headquarters, Baker and Adolphus Hotels. Headquarters, Woman's Auxiliary, Statler Hilton Hotel.

New Mexico Medical Society, May 15, 16, 17, 1957, in La Fonda Hotel, Santa Fe.

District 8, American College of Obstetrics and Gynecology, Reno, Nevada, May 27 & 28.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, 1957, in El Paso.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL
December 20, 1956

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. 722
PRESENTATION OF CASE BY DR. VICTOR BLANCO

History — Dr. M. Nathan Kleban:

A 51 year old Latin-American domestic worker entered El Paso General Hospital on September 30, 1956 because of abdominal pain and died on October 3, 1956.

Five days before admission the patient was wakened from sleep by severe knife-like epigastric and right upper abdominal quadrant pain which persisted intermittently until admission.

Vomiting occurred initially simultaneously with or subsequent to the onset of pain and thereafter immediately following ingestion of food or drink. The patient noted vigorous peristalsis.

The night before the day of admission there was a bowel movement of normal color and consistency. Information relating to past abdominal distress or to other symptoms is not recorded.

Physical Examination:

Admission temperature was 99.4, rose to 101.2 on the second and third days. Pulse was 120, regular; respirations were 28 and deep. Blood pressure was 110/80.

The positive recorded physical findings are: obesity; dryness of mouth; abdominal distention; increased peristaltic sounds (pitch, whether appearing with intensification of pain, and of what duration are not stated); epigastric and right upper quadrant tenderness; rebound tenderness thought to be present on admission; facial hirsutism.

Hospital Course:

The working admission diagnosis was mechanical intestinal obstruction. A Miller-Abbott tube was passed and a rectal tube inserted. Intravenous fluids and electrolytes consisted of: 500 cc. Ringer's Lactate during the first 24 hours; 2000 cc. 10 per cent invert sugar; 40 meq potassium; 2000 cc. 5 per cent glucose /D.W.; 750 cc. M/6 Lactate during the remainder of her hospital stay.

The only measured output of urine was 350 cc. on the last day. Twenty units regular insulin were given on the third and 25 units on the fourth day. Dramamine was given for nausea. Brownish fecal material was passed by rectal tube about 15 hours after admission.

The patient's condition was described as fair with no complaints for about 32 hours, when a large amount of fecal material began to drain from the Miller-Abbott tube, followed by a complaint of abdominal burning distress.

Fecal Material

Four hours later 300 cc. of fecal material appeared from the Miller-Abbott tube (the location of the tip of the tube was not checked by fluoroscopy). Forty-four hours after admission the surgical consultant noted that the patient's abdomen was soft, bowel sounds were present, that she was dehydrated and that she reported that she was passing rectal flatus.

Castor Oil

Fifty-two hours after admission two ounces of castor oil were given in preparation for a barium enema. Four hours later the patient was described as being clammy and restless, for which she received seconal.

She became confused, was given a tap water enema, at which time her blood pressure had dropped to 80/60, and an hour later to an unobtainable level. Levophed was started, but the patient remained in shock.

Surgical Opinion

The surgical consultant expressed the opinion that the patient had ileus secondary to uremia. The patient was seen by a medical consultant who was said to feel that surgery should not be done until the shock had been corrected. The patient died about 78 hours after admission.

Laboratory:

X-ray, abdominal, on admission: "Upright radiographic examination of the abdomen reveals considerable small bowel gas present consistent with mechanical obstruction. Gas cannot be definitely identified in the large bowel. There are also changes consistent with a peritonitis or fluid".

September 30: Urine: yellow, clear, acid, 1.026, albumin negative, sugar 4+, acetone negative. V. D. R. L. negative. WBC 8,000; hematocrit 46; hb. 15.1 gms; segs. 59, lymph. 41. Chloride 77 meq/L.

October 1: Fasting blood sugar 392 mg.%

October 2: CO_2 combining power 16.4 meq/L; chloride 106 meq/L; potassium 5.5 meq/L; sodium 157 meq/L.

October 3: blood urea nitrogen 54.5 mg.%; CO_2 combining power 19 meq/L; chlorides 71 meq/L.

X-Ray Discussion — Dr. Vincent M. Ravel:

This is a survey film of the abdomen which was taken on the patient on the day of admission. The striking feature of this film of course is the marked distention of what are primarily small loops of bowel. This is consistent with a mechanical type of obstruction. I am unable to identify any gas in the large bowel.

No Significant Opacities

There are no significant opacities of a nature which woud suggest biliary or renal calculi. There is a phlebolith in the pelvis. The properitoneal fat line and psoas shadows cannot be identified. This of course is significant as to whether an intraperitoneal or intra-abdominal effusion or ascites is present. The lumbar spine and pelvis reveal the usual degenerative changes that are seen in a patient of this age.

Mechanical Obstruction

We certainly have a mechanical type of obstruction and very possibly peritonitis or intraperitoneal effusion. One of the lesions, which must be considered, is a fulminating pancreatitis. We don't have any real radiographic evidence of rupture of any hollow viscus.

Differential Diagnosis — Dr. Victor Blanco:

This is the case of a 51-year-old woman who was admitted to the hospital September 30, 1956 because of abdominal pain. She died three days after admission. Five days before the admission the patient was awakened from her sleep by severe, knife-like epigastric and right upper quadrant pain which persisted intermittently until her admission.

This could very well have been a perforated duodenal ulcer with peritonitis, and adynamic ileus, or probably an attack of acute cholecystitis which may also give symptoms similar to those of the patient. On X-rays, there was no air under the diaphragm but this does not exclude this possibility entirely. Vomiting persisted after the initial bout with the ingestion of food or drink.

The admitting examiner noticed vigorous peristalsis. The patient also had a normal bowel movement the night before her admission. This may or may not be of diagnostic value. The history that was written on this patient is practically the same as the admission notes. There was no further history taken on her, and there was no physical examination noted. In the protocol it is mentioned that the patient had rebound tenderness.

Working Diagnosis

A working diagnosis of mechanical obstruction was made. A Miller-Abbott tube was passed and 500 cc. of Lactate Ringer's were given intravenously. The chlorides were 77 meq/L and 3000 cc. of 5 per cent glucose in water were ordered for the next 24 hours. One of these liters was later changed to a liter of Isolite. The blood sugar was reported to be 392 mg. per 100 cc, and no record was made as to when the blood was drawn or as to whether it was before or after glucose was given intravenously.

Fructose in Saline

The patient was later given 1000 cc. of 10 per cent fructose in normal saline with 40 meq/L of potassium chloride and other fluids. Fractional urines were ordered and regular insulin, 20 units were given on Oct. 2 and 15 units and 10 units were given at different times on the following day. The patient continued to pass fecal material through the Miller-Abbott tube and 44 hours after her admission the patient's abdomen was soft, she had good bowel sounds and she had stated she had passed flatus per rectum.

Patient Dehydrated

It was also noted that she was very dehydrated; electrolytes were ordered, and more fluids. Fifty two hours after admission the patient was given two ounces of castor oil, in preparation for a barium enema. Four hours later the patient became clammy and restless. A medical consultant was called in for her diabetes on Oct. 2 and he advised that no surgery should be done on her until the shock was corrected. She expired 78 hours after her admission.

Small Bowel Obstruction

Now I consider this case as a case of intestinal obstruction, possibly of the lower small bowel. In a mechanical obstruction of this sort you have to consider adhesions or possible congenital bands. Of course the latter are excluded because of the patient's age. They are usually found in early life or childhood.

The patient did not have any scars, which is what we look for in making a diagnosis of mechanical obstruction from adhesions. She had no external hernias — another cause for small bowel obstruction. It was not mentioned in the history or the physical examination whether or not she had any hernias. I took it for granted that she didn't.

Neoplasms Excluded

I excluded neoplasms because we know from the history that the patient did not have any trouble prior to the five days when she became sick. There is no history of the patient ever having intermittent bouts of obstruction, blood in the stools or any other dys-

peptic symptoms. Of course we cannot rule out malignancy entirely, as I said, because there were no diagnostic procedures undertaken to make this diagnosis.

Volvulus Considered

Volvulus could very well come into the picture here except that the X-ray does not show any definite loop of bowel that would signify a volvulus. In intussusception usually the patients have hematemesis and/or rectal bleeding, although these findings are not constant. The patient had no palpable tumors in the abdomen, or none were recorded. The pain is very similar to the one she had, colicky and intermittent.

Mesenteric Thrombosis

Mesenteric thrombosis affects males more often than females. Mostly they have associated illnesses such as heart disease, with auricular fibrillation or arteriosclerosis which may precipitate mesenteric thrombosis. It is more apt to occur in middle age such as hers, although the pain is more constant and is not intermittent in type.

Gall Stone Ileus

Now lastly, I consider gall stone ileus which is another common type of small bowel obstruction. It has to be considered in the patients in the older age groups, especially if they have had symptoms of having gall stones, etc.

The gall stone usually lodges in the lumen of the terminal portion of the small bowel, that is the ileum; and you have a triad of findings, of distention of the small bowel, gall stone in the lumen of the small bowel, usually in the terminal ileum, and air in the biliary tree.

Well, in looking at these pictures, we see no air in the biliary tree and we see no gall stone. I did not consider any large bowel obstruction because there were no symptoms of a large bowel obstruction.

Dr. F. P. Bornstein:

Thank you, Dr. Blanco. I would like to ask a question of Dr. Ravel. From this X-ray picture which was taken on the first day, you have the impression that there is a mechanical obstruction.

Dr. Ravel:

The diagnosis of mechanical obstruction of course depends upon the identification of small bowel air without any significant or any visualized gas in the large bowel, and I can not identify gas in the large bowel, so our findings were consistent with a small bowel obstruction.

It could have been an ileus, let us say just an adynamic ileus, but I would like to be able to say that there was large bowel gas before I would commit myself to an adynamic type of ileus.

Dr. Bornstein:

Now here is a question I would like to raise. Maybe Dr. Webb can help me out. Dr. Webb, if you have a patient who on the first day has evidence strongly suggestive of a small bowel obstruction, what are the indications or contra-indications for surgery? Do you think this patient should have been operated? If not, what are the indications for waiting? This has come up repeatedly and I think we ought to clarify that point in some way. What are the indications of abdominal surgery if we are faced with such a problem?

Dr. Charles Webb:

Well, I feel if you have a case of small bowel obstruction it should be operated early. You might take a little time to try to pass a long tube, that is, get it started, but not wait for it to do a decompression. As soon as the patient is in condition, I think any suspected small bowel obstruction should be operated.

Dr. Ward Evans:

I would like to comment that first this patient apparently had a mechanical small bowel obstruction judging from the protocol and also had tenderness in the right upper quadrant. Obstruction associated with abdominal tenderness usually, or very often, goes along with the strangulated type of obstruction.

Whenever you have a strangulated obstruction, be it due to an internal hernia or volvulus or what, early surgery is more urgent than in the ordinary simple mechanical obstruction where you can take a little time to get the patient into better shape. The other possibility is that this is an adynamic ileus associated with an acute cholecystitis.

Dr. Jack Postlewaite:

I was just making some remarks, to myself, thank goodness. The possibility that we are dealing with a medical or surgical lesion must be kept in mind as to the approach here.

We mustn't forget that this lady apparently responded to long tube intubation — responded except for her fluid balance. The question comes to mind, what did she lose through the tube? You will notice that her CO^2 combining power was low on admission and remained low in spite of parenteral therapy, also that her blood urea nitrogen increased, apparently with a renal shut-down which was recorded and that her chlorides remained low.

Now the interesting thing is that potassium was replaced with good cause if this is small bowel obstruction alone. However, her potassium is reported as normal and on the urinalysis it was an acid urine.

Therefore I think this could well be a metabolic death or fluid death, the end result of collapse perhaps being some accident with the castor oil, but not necessarily so. It merely precipitated the electrolyte

abnormalities and created the irreversible shock situation.

One wonders then if potassium was replaced adequately because the hypocalemic alkalosis does not reflect itself in the urine as an alkaline urine, but as an acid urine which is reported here. It may be that fluid replacement was not adequate to carry this patient to where optimum surgical intervention could have been had. However, the argument holds that a small bowel obstruction is a surgical emergency.

Dr. W. R. Gaddis:

As far as I'm concerned I think that this patient left us in an untimely manner because of an unwarranted examination, not because our quest for knowledge is bad, but because we aren't interested probably in the condition of our patient at the time we think about the examination. There was no cause to examine this patient by barium enema. As far as anyone could determine this was small bowel obstruction.

The patient was given routine preparation for barium enema study and upon receipt of the very irritating substances which are contained in castor oil, with the increased motility and force of action of the bowel, a blow-out occurred or was enlarged and the patient died of an overwhelming peritonitis.

I feel sure that along with Dr. Postlewaite's diagnosis of fluid imbalance that we have very adequate evidence that this patient might have gone along in a satisfactory manner if another approach had been taken.

Dr. Ravel:

I want to comment a little bit about that preparation for the barium enema. Those of us who have recommended castor oil for the use in preparation for a barium enema are well aware that ricinic acid has no effect whatsoever on the small bowel, that peristalsis in the jejunum and the ileum is unaffected, that it is only when this ricinic acid reaches the colon that there is any evidence of hyperperistalsis.

This has been shown many times by studies where barium with castor oil has been given, and nothing happened to the small bowel pharmacologically as a result of the castor oil, and so if there was a perforation, it was not due to the castor oil.

Clinical Diagnosis: Intestinal obstruction

Dr. Blanco's Diagnosis: Obstruction of lower part of small intestine.

Pathological Diagnosis: Acute peritonitis due to gall stone ileus.

Pathological Discussion — Dr. Bornstein:

On autopsy there was, as was to be expected, a severe, generalized peritonitis. Now, in investigating a peritonitis, I usually follow a certain route and always start with the appendix, it being the most common cause. Here the appendix was innocent.

The next common cause of peritonitis in an elderly person is a perforation due to a carcinoma in the lower bowel, which was absent.

The Stomach

The next was the stomach. The stomach was intact. We followed the duodenum down about two-thirds and came to a point where there was a fistulous tract connecting the gall bladder with the duodenum. With this hint we then naturally went down to the ileo-cecal valve and started looking around and found a gall stone obstructing the lower ileum.

The gall stone was ovoid in shape and measured about 4 cm. in the longitudinal and 3 cm. in the vertical axis and was of the cholesterol type.

The findings then are those of a typical gall stone ileus, the obstruction being shortly above the ileo-cecal valve. These are extremely rare cases. I think the only other one I ever used in a C. P. C. was about 12 years ago, but when they appear they are serious and easily fatal.

Experience Cited

Now it has been my experience that every case of small bowel obstruction that has not been treated surgically has terminated fatally. One of the contributory causes seems to be the Miller-Abbott tube which for 24 hours improves the condition of the patient and gives a false impression of recovery. I have watched that for the last ten years.

Unrecognized peritonitis, or at least peritonitis not treated surgically, takes a large toll of victims. Although I am giving away something for future discussants, I am going to pursue this particular subject further in next year's conferences, because we have seen too many examples of death due to peritonitis.

Further Comments On . . .

(Continued from Page 117)

to instruct personnel and to adequately treat the dire consequences of such exposure.

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BOOKS

A Study of the Effects of Krebiozen Reviewed

By Jack C. Postlewaite, M. D., El Paso

Krebiozen has been a controversial medication with regard to its anti-cancer properties. The defense and repair mechanisms of the body are enhanced by this extract of the reticulo-endothelial system prepared by the method of Hartz. The evidence of resistance to cancer naturally with the spontaneous regression rate of human cancer is approximately one in 100,000 cases or 0.001 per cent. The results of an extensive research with clinical evaluation reveals that a palliative improvement might be anticipated in 68 per cent of patients treated with Krebiozen.

Malignant tumors would routinely decrease in size, and in a few patients actually disappear. Many of the tumors were noted to show evidence of liquefying necrosis, with marked change histologically, following the administration of Krebiozen. Many tumors so observed recurred promptly after discontinuing the therapy. Approximately 50 per cent of the patients gave proof of oncolytic properties possessed by Krebiozen in its effect on the tumor.

Two Groups

The patients were sub-divided into two groups. Group No. One consisted of 100 patients observed in Chicago, and for the most part by the authors Group No. Two consisted of 587 patients observed by 225 physicians. All cases were far advanced and hopeless with progression of the disease in 97 per cent of the cases. The following subjective changes were noted: Reduction in pain in 79 per cent of all patients. The pain was abolished in 27 per cent and markedly relieved in 10 per cent of group No. One. The pain was abolished in 28 per cent of group No. Two. Narcotics were abolished in 27 per cent and reduced in 67 per cent of all patients. Sleep improved with a reduction of the use of hypnotics and a marked euphoria occurred in 12 per cent of group No. One patients, and 17 per cent of group No. Two patients.

Objective Signs

The objective signs of improvement were as follows: The size of the palpable primary tumor or metastasis decreased in 50 per cent of the patients, remained stationary in 26 per cent of the patients. The body weight improved in 63 per cent of the weighed patients in group No. One, and 67 per cent of the weighed patients in group No. Two. This weight gain was approximately eight to nine pounds. The mobility of the involved extremities and total body mobilization improved generally. Eighty per cent of bed ridden patients in group No. One became ambulatory, and 23 per cent of group No. Two patients improved decidedly.

The length of survival of the cancer patients of both groups was unequivocally increased in the ambulatory patients. Amongst the 66 patients in group No. Two on whom an autopsy was performed there was extensive necrosis and liquefaction of the metastasis in 28 per cent. The incidence was 33 per cent in group No. One.

Histologic Changes

Histologic changes in these tumors included vaculization of the cytoplasm and nucleous and cytolosis of the tumor cells with infiltration of leukocytes. The mechanism for the relief of pain was thought to be the liquefaction necrosis of the tumor cell which reduced the pressure, the secondary induration, and the edema of the nerve tissue.

Fifteen patients had central nervous system involvement, both brain and nerve root invasion, and were disoriented or in coma. They became lucid and remained lucid on Krebiozen therapy for from 48 hours up to 21 months; average three months. Thirty-eight patients with metastasis showed an 86 per cent improvement for an average of 2.6 months.

Case Observations

Case observations were included in this monograph. Several charts and graphs reveal summaries of their observations and substantiate the claims of their investigation and research.

In all the book is an excellent scientific review of a new drug used in the management of cancer. One anticipates that additional research along this line may not only be palliative but curative in malignant disease. It is true that a study of 700 cancer patients for a period of approximately five years is not sufficient to properly evaluate Krebiozen.

Improvement Gratifying

However, the improvement is certainly gratifying to the patients who noted relief of pain and prolongation of their life. One wonders if the defense mechanisms of the body become thoroughly understood and that a chemical means of stimulation of these defense mechanisms might not be the ultimate goal in medical cancer therapy. One would certainly want to spend a little time with the scientific and theoretic contents of this book before passing judgement on Krebiozen therapy, and like drug therapy.

OBSERVATIONS ON KREBIOZEN IN THE MANAGEMENT OF CANCER. By A. C. Ivy, Ph D., John F. Pick, M. D., and W. F. P. Phillips, M. D. — Published by Henry Regnery Company, Chicago, Illinois, 1956.

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Southwestern MEDICINE

VOL. XXXVIII MARCH, 1957 No. 3

EDITORIAL

Here We Go Again!

By Robert B. Homan, Jr., M. D., El Paso

The wheels of the new 85th Congress of the United States are now grinding away. The organization of this Congress is now complete, and, as of today, (2-11-57), the complete roster of the Senate and House Committees are at hand. Again, as in the last two years of the 84th Congress, we have a Republican Administration and Democratic control of the House and the Senate. This seems to be of little consequence, as far as the practice of medicine is concerned, for Mr. Eisenhower and his party continue to act like new-dealers in health matters — as well as in other fields.

High Level Expenditures

The President's budget message to Congress placed expenditures at the highest peace-time level in history. It was this message which exhorted his Secretary of the Treasury, Mr. Humphreys, to predict "a depression that will *curl* your hair" — if the government continues on its present fiscal binge! It was this message and a so-called "tight money" policy (of increasing "interest rates") that has brought about a sharp decline in the stock market — evidenced by the Dow-Jones averages.

The writer endorses the "tight money" policy as a means of controlling the dangerous inflation which grips our country today. I also believe that a "tight money" policy would be most financially helpful if it were also applied to government operation and expenditure. So long as the Federal Government merrily throws your tax money away, controls of personal, business or corporation credit and expenditures will have little, if any, effect on Mr. Humphreys' "hair curling".

At the risk of being repetitious, may I again call your attention to the fact that your Government has nothing to spend except that money which it gathers from you and your fellow countrymen through taxation?

Bulging At Seams

The administration's requests to Congress to finance the government's health and medical activities for the next year are reprinted on page 172 of this issue of SOUTHWESTERN MEDICINE. Literally, the central government's medical expenditures are bulging at the seams! These represent health and medical care programs at the national level which are already in existence under the law.

In addition, during the first seven days of the present Congress, 140 health-medical bills of significance have been introduced or re-introduced (this is a *new* Congress) — any and all of which require, if passed, further government expenditure in the health field! Included are bills providing for federal aid to medical, dental and osteopathic schools (providing construction and equipment grants), and a new proposal for national health insurance!

Identical Bills

Senator Murray, of Montana, one of the original sponsors of the 14-year-old "socialized medicine" legislation, and Representative Dingell (Michigan), the son of one of the original co-sponsors of the Wagner-Murray-Dingell bill, have introduced identical bills in the Senate and House — S.844 and H.R.3764.

Many of the provisions of the original bill have already been passed — piece-meal — including medical research grants, Hill-Burton act and expansions, medical aid to rural and shortage areas, grants for maternal and child health, more state grants for health work, education of health personnel, etc. The present bill provides for a contributory system of health insurance for the working population similar to social security.

The worker and his family would be eligible for preventive and diagnostic exams, laboratory and X-ray services, hospitalization up to 60 days per year, dental services, more expensive drugs, special appliances and eye-glasses, all for a tax not to exceed $90 per year plus an equal contribution by the employer. Of course, the government is authorized to ask Congress for additional funds as needed.

Here we go again — anybody can catch the brass ring — right in his good eye.

Specific Administration Budget Requests For Health Programs

(For Fiscal Year 1958, Which Starts on July 1, 1957.)

The following table presents specific requests made by the Eisenhower administration to finance major U. S. health and medical activities for the next fiscal year. First column shows what the programs are expected to cost in the current fiscal year and the second the new requests. Some programs that will require new legislation — such as aid to medical schools — are not carried in the budget but will be added later. Military medical expenses listed do not include construction or alteration of facilities.

	Estimated Fiscal 1957	Requested for Fiscal 1958
Food and Drug Administration	$ 7,979,000	$ 10,554,500
Office of Vocational Rehabilitation	42,110,000	50,945,000
Children's Bureau	41,183,000	43,654,000
Public Health Service	534,661,093	557,408,455
Venereal Disease Control	4,195,000	4,415,000
TB Control	6,660,000	7,000,000
Communicable Disease Control	5,750,000	6,260,000
Sanitary Engineering activities	9,000,000	13,063,000
Grants for Waste Treatment Plants	50,000,000	50,000,000
Hill-Burton	125,000,000	121,200,000
Hospitals and Medical Care	39,011,000	44,399,000
Indian Health Activities	38,096,545	43,311,545
Construction of Ind. Health facilities	8,762,000	5,800,000
NIH (Gen'l research and services)	12,122,000	14,026,000
Nat'l Cancer Institute	48,432,000	46,902,000
Mental Health Activities	35,197,000	35,217,000
Nat'l Heart Institute	33,396,000	33,436,000
Dental Health activities	6,026,000	6,430,000
Arthritis & Metabolic Diseases	15,885,000	17,885,000
Allergy and Infectious Diseases	13,299,000	17,400,000
Neurology & Blindness activities	18,650,000	18,887,000
Nat'l Library of Medicine	1,004,638	1,450,000
Veterans Administration	797,173,000	831,000,000
Outpatient care	82,638,000	79,000,000
Inpatient care	662,900,000	702,000,000
Hospital & Domiciliary Facilities	51,635,000	50,000,000
Atomic Energy Commission (Med.)	31,598,000	36,000,000
Civil Defense Administration	41,790,000	62,000,000
St. Elizabeth's (Wash. D. C.)	2,737,000	3,265,000
Defense Department	306,032,000	426,611,000
Army	144,038,000	158,200,000
Navy	61,100,000	87,200,000
Air Force	76,894,000	108,416,000
Medicare	24,000,000	62,795,000

Reprinted from AMA Washington Letter 85-3, January 18, 1957

CURRENT THERAPY

Prophylaxis of Recurrent Rheumatic Fever*

By Jack A. Bernard, M. D., F. A. C. P., El Paso

Recurrent rheumatic fever prophylaxis has been outlined in Public Health Reports in April 1955 as follows:

1. All individuals with established history of rheumatic fever or chorea, or definite evidence of rheumatic heart disease, should be given continuous prophylaxis.

2. Begin when the patient is first seen, whether in the active stage or not.

3. Continue the prophylaxis throughout life, without intermission during the summers.

4. Oral sulfadiazine dosage is recommended each morning 0.5 to 1.0 grams, the smaller dose for children under 60 pounds.

5. Oral penicillin is recommended in the dosage of 200,000 to 250,000 units before breakfast on an empty stomach.

6. Parenteral penicillin dosage (preferable to the oral dosage of either sulfadiazine or penicillin because it does not rely on patient co-operation), is 1,200,000 units of benzathine penicillin G intramuscularly monthly.

Prophylaxis Should Be Maintained

It should be emphasized that sporadic and even epidemic streptococcal infection can occur at any season, so prophylaxis should be maintained throughout the year.

Sulfadiazine is easily administered, well absorbed, has proved effectiveness, and is inexpensive. A sulfadiazine tablet costs five cents, whereas a penicillin tablet costs twenty to forty cents. Its major limitation is that it is bacteriostatic rather than bactericidal and is therefore suppresive only, and does not thereby eradicate the streptococcal carrier state. Serious toxic reactions to the small doses used are surprisingly uncommon.

Mild skin eruptions occur in 0.5 per cent and blood reactions occur in 0.01 per cent. Do not use sulfadiazine for intercurrent infection and be alert in such instances for granulocytopenia. Serious or fatal reactions have occurred in such cases where granulocytopenia was overlooked and the sulfadiazine was increased for intercurrent infection.

*This is the second of a series of articles on Rheumatic Fever by Dr. Bernard.

Oral Penicillin Effective

Oral penicillin is highly effective in eradicating the group A streptococci and in preventing the streptococcal infections. Serious toxicity is rare. It should be emphasized that there has not been reported a proved instance of penicillin-resistant group A streptococci associated with human infection. Therefore the development of penicillin resistant group A streptococci is *not* a problem!

The major disadvantage of daily oral prophylactic penicillin is that ambulatory patients are apt to forget the tablets regularly. It has been shown that a single injection of 1.2 million units of repository penicillin (benzathine penicillin) results in detectable penicillin serum levels for three to four weeks.

The site of injection tends to be more painful with the use of this compound than with other forms of procaine penicillin. Hypersensitivity reactions have thought to have been more common with this form of penicillin but others have reported that they are about the same as with the parenteral use of other forms of penicillin.

Penicillin Indicated

In the prevention of initial attacks of rheumatic fever prompt and adequate penicillin for streptococcal infections is indicated. It has been shown that the attack rate of rheumatic fever following streptococcal pharyngitis in the general population is about three per cent. In rheumatic fever patients the attack rate is about 50 per cent.

The earlier penicillin is instituted, the more effective is the prevention of subsequent rheumatic fever. There is some evidence that treatment instituted even as late as nine days after the onset of symptoms may still exert some favorable prophylactic effect upon the incidence of rheumatic sequelae (by eradicating streptococci deep in the tonsillar tissue).

Special Techniques

In a recent study, it has been shown that strept may be isolated six weeks after a streptococcus illness by special bacteriological techniques. Treatment of a streptococcal carrier on the ninth day following his illness showed a decreased incidence of the carrier state on the thirteenth day. Also, the antistreptolysin O titer was reduced by penicillin therapy as late as the ninth day.

(Continued on Page 176)

THE PRESIDENT'S COLUMN

The Dilemma of a Great Profession

By Celso C. Stapp, M. D., El Paso

During the past twenty five years we have seen some of the most remarkable strides in the advancement of scientific medicine and also to some extent in the art of medicine. One would think that this is enough to encourage the youth of our nation to want to take up this noble profession above all other vocations.

Sadly, we must admit, this is not the case. The deans of our medical schools inform us that there are fewer applicants and that the quality of the applicants has begun to decline. There are many reasons for this; and to try and elicit all of them would be impossible. There are, however, several outstanding factors which are quite shocking. None of these are new to us but they stand repeating and looking into more and more.

Other Fields

In this time of prosperity it is very easy for an intelligent young man to enter some other field of endeavor than medicine with greater financial gain. This may be done without having to go through the long years of school and training.

This, of itself, is not a complete deterrent, if it were not for the fact that the prestige of the profession has been damaged in many ways.

For one, many articles are appearing in lay magazines by inference and directly condemning the profession. It is rather apparent that there are about equal numbers of articles praising the profession as there are damning the practice of medicine.

An individual may read the articles praising the profession and one with some luscious bit of gossip or condemnation, and with rare exception he will remember the one which has not been complimentary.

Besides this, there is some directly erroneous information written. Wide publicity is given to any suits involving doctors. This incites other suits and threats of suits, some of which are attempts to blackmail the doctor for money in fear of suit. The practice of medicine has been molded by this into a partially defensive behavior in effort to prevent suits.

Great Deterrent

One of the greatest deterrents to the prospective student has been the threat of socialization. I am not only speaking of socialized medicine but the general socialization of our nation. With the advent of Medicare we have seen one of the greatest steps in socialization. This was done quietly by placing the profession in a stalemate with a gimmick. This Medicare was put in to reduce the number of doctors in the Services. It is now apparent that this will not happen. Medicare is now being tried out as an experiment; but as always it will go on and on. There will be many other groups of people who will be included before it is over. Within the structure we have a system for the destruction of American medicine as we now know it and our democratic form of living.

Little Wonder

It is little wonder that a truly ambitious young man does not want to enter medical school to become a part of the practice of medicine and to be caught in the net of governmental bureaucratic control. If you were starting into medical school today do you think that it would be worth it? As wonderful as our country is, do you not think that with the advent of socialism we are not laying the doom of our civilization.

In the history of our world it may be noted that very few civilizations have fallen to the doom of pestilance. Most have come from governmental decay. We do not have to have socialism in the form of cradle to the grave or any variety of the so-called "Welfare state".

Our country was built on hard work and the search for opportunity and not the encouragement of dependency

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PEDIATRICS

A Comparison Of "Symptomatic Treatment", Gamma Globulin, And Penicillin In The Treatment Of Scarlet Fever

Weinstein, L. & Potsubay, S. F., J. Pediat. 37:291, 1950

Penicillin is apparently the product of choice in treatment of scarlet fever. Gamma globulin produced rapid fading of the rash but, in contrast to penicillin, exerted little additional effect. Penicillin-G was employed intramuscularly in total daily dosage of 120,000 units, administered fractionally every three hours for ten days.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

(continued)

66. "Little wonder that parents, unsure of themselves and uncertain of the meaning of their behavior, are unable to exert the direction and authority that a child expects from his parents and needs for his best development. Moreover, children sense the parental anxiety and unsureness and take on these feelings themselves." Harry Bakwin; *loc. cit.;* P. 229.

67. "Most of the mothers who are, at first, overly anxious about the problems of child rearing come, with time, to appreciate the hardiness of the human constitution and the strong drive toward normal development and, with their second and subsequent children, lose much of their early anxiety." Harry Bakwin; *loc. cit.,* P. 229.

68. "Probably the principal shortcoming of currently popular attitudes on child rearing is the failure to emphasize the personality attributes that parents and society at large prize most highly — namely, character." Harry Bakwin; *loc. cit.,* P. 230.

69. "I do not propose that the task of character building is in the province of the physician, and I should prefer to have it remain where I believe it belongs: in the home, the church and the school." Harry Bakwin; *loc. cit.,* P. 230.

Home Important

70. "Experience shows that children thrive best in a home atmosphere where they believe that their parents are sincerely fond of them, where they are accepted for what they are without undue pressure, where discipline is firm and consistent and where character building is fostered by example, by precept and by just reward for proper behavior. Given such a home, it matters little for the psychologic development of the child whether or not he is nurtured at the breast or by bottle, by self-demand or rigid scheduling, or whether toilet training is too early or too late." Harry Bakwin; *loc. cit.,* P. 230.

71. "It should be remembered that children are hardy creatures, and that they will take a great deal of pushing around without being harmed. The urge toward normal growth and development is strong." Harry Bakwin; *loc. cit.,* P. 231.

72. "The particular qualities that parents would inculcate in their children are, to a large extent, individual and personal. Some parents would emphasize in their children integrity of purpose, others humility, others kindness and generosity, and still others force of character and initiative. This is the parents' privilege — indeed, it is their duty." Harry Bakwin; *loc. cit.,* P. 231.

Physician Neurosis

73. "The neurosis of the physician practicing by himself is that he views with suspicion but strictly depends upon the large medical group that produces and controls the means and most of the material of his lifework." *New England Journal of Medicine;* Mar. 26, 1953; P. 564. Editorial.

74. "In medical schools there is a growing tendency to look upon those whose interests lie mostly in clinical medicine as distinctly 'old hat.' The feeling is increasing that everyone of merit should be doing research. The excellence of a medical school as a school now appears to be judged more by the papers issuing from it than by the quality of its teachers." Howard P. Lewis; *J. A. M. A.,* August 20, 1955; P. 1415.

75. "The modern management of advanced cancer places a moral obligation on the surgeon to see his patient through one way or another. The daily care of the patient requires the services of an able and sympathetic physician or of an institution skilled in the management of these problems, but unless the surgeon is somewhere in the background, as the strategist if not the tactician, the patient loses faith and courage, and his existence becomes a kaleidoscope of pain, despair and narcosis." J. Englebert Dunphy; *New England Journal of Medicine;* July 2, 1953; P. 23.

Misguided Surgeons

76. ". . . too often the conscientious but misguided surgeon performs a colostomy or a gastrostomy and gives thousands of cubic centimeter of blood to drag out a patient's tortured existence for a few odd days or weeks. The surgeon has no right to take the patient's life, but he is likewise under no obligation to employ fantastic measures to prolong it in the face of intolerable and clearly terminal disease." J. Englebert Dunphy; *loc. cit.,* P. 23.

77. "The falling-off of 'intelligence' with age is inexorable, and the sustained brilliance of some of our elder statesmen and professional men can be explained only by assuming that their 'intelligence level' was originally so high that even a considerable reduction leaves them well above the normal for the general population." P. D. Bedford & M. D. Leeds; *The Lancet;* August 6, 1955; P. 262.

"POINTERS"

From the Case Records of the Massachusetts General Hospital*—1953

1. "Contrary to an opinion that I once had, Cushing's syndrome can occur without any demonstrable osteoporosis." p. 32

2. "In this hospital, the radiologists refuse, and rightly so, to give x-ray treatment to a mediastinal mass until they know what it is. We have had a patient with a mediastinal mass that was treated by x-ray and later found to be tuberculous, with death due to miliary spread." loc. cit.; p: 74

3. "Tabes dorsalis is a frequent cause of erroneous diagnosis in surgery. Of 1000 patients with tabes dorsalis seen at Cook County Hospital about 10 per cent had been subjected to needless abdominal operations simply because the symptoms of tabes had mimicked those of an acute abdominal condition." loc. cit.; p. 114

4. "There are usually three types of gastric crises: one consists mostly of pain, the second mostly of vomiting, and the third and most common of both pain and vomiting." loc. cit; p: 114

Simulated Pneumo-Thorax

5. "Severe traumatic fracture of the spine is occasionally associated with rupture of the diaphragm and passage of hollow abdominal viscera into the chest, simulating pneumo-thorax." A Composite; loc. cit.; Jan. 22, 1953; p. 154

6. "Jaundice in severe congestive failure may be due to central necrosis of the liver." A Composite; loc. cit.; Jan. 29, 1953; p. 205

7. "Multiple metastases of a carcinoma of the prostate do not have to be accompanied by high acid phosphatase. The acid phosphatase can be normal, even when the metastases are in bone." loc. cit.; p. 252

8. "I do not think one can overemphasize the diagnostic importance of so-called spider angiomas—they usually mean long-standing liver disease except in the pregnant woman. It is true that spider angiomas have been demonstrated in infectious hepatitis, viral in origin, in the course of an acute attack, but that is unusual; almost always they strongly suggest the presence of progressive, continuing chronic intra-hepatic disease." loc. cit.; p. 342

Fibromas of Ovary

9. " . . . fibromas of the ovary may be associated with ascites and in still other cases with ascites and hydrothorax, the latter being examples of the Meigs-Cass syndrome. It is thought that the peritoneal fluid results not from peritoneal irritation by the tumor but by a transudation of fluid from the tumor itself. In cases of Meigs-Cass syndrome, the pleural fluid is apparently derived from the ascitic fluid by transmission through diaphragmatic lymph channels." loc. cit.; p. 473

10. "The cause of bone-marrow embolism is almost always a bone fracture and usually a major fracture; but often there is no evidence of a definite fracture, and Rappaport et al. believe that violent muscular contraction, such as may occur with a convulsion, may so injure a vertebra that cancellous bone marrow may be forced into the contiguous sinusoidal veins, becoming emboli. Bone-marrow embolism has also been observed in the lungs of patients who have had convulsions associated with tetanus and shock treatment in whom there was no evidence of an injury grossly." loc. cit.; p. 517

11. "Carcinoma of the body and tail of the pancreas can be an exceedingly silent disease manifested only by pain. In most recent series it has been stated that pain is the commonest introductory symptom for carcinoma of the pancreas. The pain usually bores through, straight to the back . . . such patients can maintain their hemoglobin very well for quite a long time. The periumbilical node is consistent with carcinoma of the body or tail of the pancreas." loc. cit.; p. 696

12. "A negative intravenous pyelogram is against hypernephroma, but it does not rule it out entirely, since a small primary lesion can set up a large solitary metastasis." loc. cit.; p. 700

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. — Andrew M. Babey, M. D.

Prophylaxis of Recurrent.....

(Continued from Page 173)

Finally, new cases of rheumatic fever were decreased by penicillin therapy as late as the ninth day. These findings suggest that the living streptococci are necessary for the development of rheumatic fever. For prevention of initial attacks of rheumatic fever or to prevent a recurrence of rheumatic fever, the dosage of penicillin for a streptococcal pharyngitis should be 300,000 units of penicillin intramuscularly daily for ten days or preferably 600,000 to 1.2 units of benzathine penicillin intramuscularly. The lower dosage of 600,000 has been recommended as less likely to cause toxic reactions.

Sulfonamids (which are bacteriostatic rather than bactericidal) are ineffective in the eradication of streptococci from the throat.

Index To Dr. Andrew M. Babey's Aphorisms

Because of the widespread interest in Dr. Babey's collections of Aphorisms and Memorabilia, the editors of SOUTHWESTERN MEDICINE are presenting annual indexes of the Aphorisms.

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MEETINGS

Dr. W. A. Jones Elected President of Texas District One Medical Association

Dr. W. A. Jones of El Paso was elected President of District One of the Texas Medical Association at the group's annual meeting in Pecos, Texas, February 12. Dr. E. W. Schmidt of Pecos was the retiring President.

Other new officers are Dr. William Lockhart, Alpine, Vice-President; and Dr. E. S. Crossett, El Paso, Secretary-Treasurer. Pecos was selected as the site for the 1958 annual meeting.

Born in Batesville, Arkansas, Dr. Jones received his M.D. from the University of Arkansas School of Medicine. He interned at Schempert Memorial Hospital in Shreveport, La., and took his residency in City Hospital in Washington, D. C., and the Highland Hospital in Ashville, N. C. His preceptorship was with Dr. Carl W. Rand of Los Angeles.

Three Years In Army

With the exception of three years in the Army Medical Corps, he was Chief of Neurosurgery in the Veterans Administration Hospital in Los Angeles over a 13-year period. He came to El Paso in 1949.

He is certified by the American Board of Neurosurgery and is a member of the Harvey Cushing Society, the Southern Neurosurgical Society and the International College of Surgeons.

Dr. W. A. Jones

Dr. Jones is a member of the Lions Club and the First Baptist Church. He and his wife have a son, 22, and a daughter, 21.

Speakers at the meeting were Dr. M. O. Rouse, Dallas, President of the Texas Medical Association, Lincoln Williston, Austin, executive secretary of the TMA, Dr. J. E. Miller and Dr. William Aronoff, both of Dallas, Dr. Willard W. Schuessler and Dr. R. F. Boverie, both of El Paso.

Clinical Pathological Conference

A clinical pathological conference was presented by the El Paso County Medical Society's Tumor Clinic.

Dr. Rouse emphasized in his talk that the U. S. has the best health standards in the world today and that it is the only major country that still maintains the private practice of medicine.

He cited statistics to show that the total health bill in this nation in 1955 was $12 billion and was only four per cent of national income. The $12 billion is broken down into $3 billion for hospitals, $3 billion for physicians, $1 billion for dentists and $5 billion for drugs. He said that the nation spends $8 billion for alcohol, $5 billion for tobacco, and $35 billion for national defense. The per cent paid physicians has declined 1.3 per cent from 1952 to 1955.

106 Million Insured

Dr. Rouse stressed that 106 million people in the U. S. out of a total population of 169 million are now covered by voluntary prepayment health and hospitalization insurance. He said everyone should have the Salk vaccine for complete polio immunization but that only 10 per cent of Texas population has been inoculated to date.

He announced that the Texas Medical Association for three months has been studying mental health facilities in Texas with the assistance of Dr. Francis G. Gertz of Chicago, Professor of Psychology at the University of Illinois School of Medicine. A report to the Texas legislature was scheduled, he reported.

Medicare Discussed

Speaking on "Medicare: Its Highlights and Its Long-Range Implications", Mr. Williston said that Medicare is certain to have a very important effect

upon medical and hospital care in the U. S. in the future and that the principles of the program reflect, to a large degree, the dramatic socio-economic trends which are affecting the practice of medicine today.

The complete text of Mr. Williston's remarks follow:

"The Dependent Medical Care Act was passed by the 84th Congress, and it became effective on December 7, 1956. This new law, for the first time, gives statutory authority to the federal government to continue what it has been doing for many years; namely, to provide medical care for dependents of servicemen. The expressed purpose of Medicare is to create and maintain high morale throughout the armed forces by providing an improved program of medical care for servicemen and their dependents. The most important new feature of this program is that it enables dependents of those in military service to be treated by doctors in private practice and to be hospitalized in civilian medical facilities.

"One of the foremost questions with which the physician in private practice is concerned is who is eligible for medical care in civilian facilities. For the most part, private practitioners will be rendering care to wives of active servicemen and to children under 21 years of age. It is true, however, the husbands of Waves, Wacs, and other servicewomen also are eligible. In addition, children of servicemen who are full-time students or those who are incapable of self-support because of physical or mental handicaps are eligible until they reach their 23rd birthday.

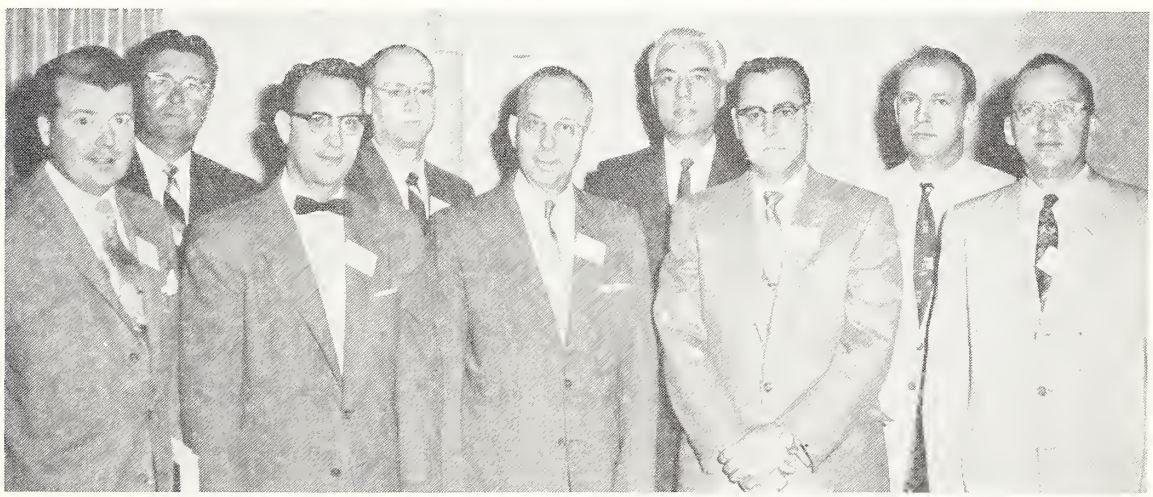
Choice of Facilities

"The Department of Defense has given these individuals a choice of medical facilities at the present time. They may select the doctor in private practice, or they may choose medical care in a facility of the armed forces or the U. S. Public Health Service. However, for dependents living with the serviceman, treatment at civilian facilities may be restricted in certain areas if the Commanding Officer rules that military medical facilities are not being utilized adequately.

"Civilian medical care to which dependents are entitled is quite broad. It includes acute medical and surgical conditions, contagious diseases while in the hospital, complete obstetrical and maternity care, 365 days of hospitalization, pre- and post-hospitalization services by the doctor for bodily injury or in connection with a surgical operation, acute emergencies of any nature, and diagnostic tests and procedures during hospitalization.

Limited Outpatient Benefits

"It should be emphasized that Medicare is a program which provides primarily for hospitalization and for professional services during the period of hospitalization. It does not permit, at government expense, medical care normally considered to be outpatient professional services. Certain limited outpatient benefits are included, nevertheless. They are treatment of bodily injuries, and diagnostic tests and procedures for the treatment of fractures, dislocations, and lacerations. In reporting the scope of this program, I believe it is important to note that there are



Left to right at the annual meeting of District One of the Texas Medical Association in Pecos, Texas, February 12, are Mr. Lincoln Williston, Austin, executive secretary of the Texas Medical Association; Dr. Maynard Hart, El Paso, moderator of a case presentation by the El Paso County Medical Society's Tumor Clinic; Dr. R. F. Boverie, El Paso, one of the speakers; Dr. E. W. Schmidt, Pecos, retiring president of District One of the Texas Medical Association; Dr. M. O. Rouse, Dallas, president, Texas Medical Association; Dr. Charles E. Oswalt, Jr., Fort Stockton, councillor for District One; Dr. W. W. Schuessler, El Paso, one of the speakers; Dr. John P. Dunn, Pecos, retiring District One secretary-treasurer; and Dr. H. D. Garrett, El Paso, retiring vice president of District One.

six general services which are not authorized. These are the treatment of chronic diseases, nervous and mental disorders, elective medical or surgical procedures, dental care, ambulance service, and prosthetic devises, hearing aids, and spectacles.

"As far as financial responsibility is concerned, the government will pick up the major part of the check for medical and hospital services rendered in the program. When hospitalized in civilian facilities, the dependent will pay the first $25 of the expenses incurred, or $1.75 per day, whichever total is the larger. The Texas Medical Association and the Department of Defense have agreed upon a schedule of fees which will be allowed for professional services. The Board of Trustees of the Texas Medical Association has negotiated a very fair schedule, and it should cover most procedures in a satisfactory manner. Medicare is based upon the premise that the doctor should charge his average, customary fee.

Fiscal Administrator

"At the request of the Texas Medical Association, Blue Shield of Texas is serving as the fiscal administrator for doctors who participate in the program. Blue Shield presently is processing all medical claims and is being reimbursed by the Department of Defense. Mutual of Omaha is serving in a similar capacity for the hospitals. May I add here that in contract negotiations, officers of the Texas Medical Association vigorously supported Texas hospitals in their request for a free choice in designating Blue Cross as their fiscal agent. Despite our joint efforts, however, this request was denied, and the assignment subsequently was given to Mutual of Omaha.

"Turning to the long-range implications of this program, there is no question that Medicare will have a pronounced effect upon the private practice of medicine and the operation of our civilian hospitals. Approximately 2,000,000 dependents of military personnel presently are eligible for benefits. Texas, with its large military installations, is a key state in this new federal enterprise.

Considerable Controversy

"Medicare already has produced considerable controversy. The program is certain to be scrutinized even more carefully in the months ahead, not only by physicians and hospitals in areas near military installations, but in all communities throughout the state. In analyzing the long-range implications of this program, many of our doctors look upon it with mixed emotions.

"There are some practitioners who regard Medicare as a step away from government control. They argue that because the program tends to transfer the care of military dependents from government doctors to private doctors, it means less—not more—Federal medicine. But many others look upon it as another slip in the wrong direction. These physicians believe that it necessarily will lead toward government control of medical care.

Favorable Side

"More specifically, on the favorable side, the program is designed to make possible a higher quality of medical care through the utilization of civilian medical facilities and doctors in private practice. Almost everyone agrees that this objective is commendable, and that it should be achieved. In addition, with better medical care available to dependents, the Department of Defense has anticipated that the program will be a factor in reducing the present high turnover of skilled personnel in the armed forces.

"It is possible that several favorable by-products of this program might materialize. A segment of medical care previously furnished in military installations now can be channeled back to civilian hospitals and to doctors in private practice. This is expected to result in a lessening demand for physicians in the armed forces, with the anticipated expiration of the Special Draft Law on June 30 of this year. And through the utilization of our community hospitals, it also is conceivable that the need for military medical facilities will not be increased in the years ahead.

Principles Of Free Choice

"We also should acknowledge that the Medicare program embodies the principles of free choice. The patient may pick the doctor he wishes. The physician also will maintain his traditional right of selection of patients, and if he wishes, he may elect not to participate in the program.

"But unfavorable aspects of the Medicare are equally apparent. The federal government will spend, by its own calculations, $74 million dollars annually to subsidize medical care for dependents. The government not only will pick up the check for actual medical and hospital services, but also the cost of administering the program. These expenditures will add substantially to the increasing tax burden of this nation.

"Another objectionable feature is the fact that Medicare is a full service program. Physicians are remunerated by the government in accordance with a published schedule of allowances, and there is no provision for additional charges to the patient by the doctor. This principle is not compatible with the time-honored privilege and right of every doctor to decide for himself whether or not a fee offered by a third party shall be accepted as payment in full for his professional services.

Greater Concern

"But of even greater concern, is the fact that the Medicare program will contribute to the trend towards big government. With another Congress now in session, there already has been some discussion of extending the principles of this program to include

(Continued on Page 182)

Doctor-Lawyer Meeting Scheduled for Denver

The American Medical Association has invited doctors and lawyers in the Rocky Mountain and Great Plains states to a medicolegal symposium in Denver March 22 and 23.

"Medicine and the law must work together so frequently that we feel open discussions of mutual problems would be of great assistance to the two professions," said C. Joseph Stetler, Director of the American Medical Association's Law Department, in announcing the meeting.

One of a series of three such symposiums to be held during March in various sections of the United States, the Denver symposium will feature such subjects as trauma and disease, medical expert testimony and the medical witness. In addition, a mock trial demonstration will take up the introduction in court of chemical tests for intoxication.

Registration Scheduled

Registration fee for the meeting — to be held at the Cosmopolitan Hotel — is $5.00. This will cover the cost of a luncheon session and a copy of any proceedings that are published. Plans are being made to accommodate 350 attorneys and physicians.

Applications for attendance, together with the registration fee, should be sent to the Law Department, American Medical Association, 535 North Dearborn, Chicago 10, Illinois.

Other meetings in the current medicolegal series will be held in Atlanta, March 15-16 and in Philadelphia, March 29-30. Last year similar symposiums were held in New York, Chicago and Omaha.

Academy Outlines St. Louis Program

Are children's ears and feet neglected? Is a laboratory report always accurate? What's new in the world of tranquilizers? These and hundreds of other important questions will be answered during the American Academy of General Practice Ninth Annual Scientific Assembly, March 25-28 in St. Louis' Kiel Auditorium.

More than 25 prominent physician - authorities will appear on the four-day scientific program. In addition, the more than 5,000 family doctors expected to attend will have opportunities to visit 73 scientific and 260 technical exhibits. The Academy, founded in 1947 and headquartered in Kansas City, Mo., has more than 21,000 family doctor members and is the nation's second largest medical association.

Post-Graduate Education

The 1957 scientific program will provide an unparalleled post-graduate education opportunity for physicians who, by definition, must guide their patients through the increasingly complex field of medical care.

Border Public Health Association to Meet in April in San Antonio

The 15th annual meeting of the United States-Mexico Border Public Health Association, will be held in San Antonio April 9-12 with headquarters in the Hilton Hotel.

Dr. J. C. Ellington, health officer of San Antonio, is chairman of the San Antonio planning committee for the meeting. Dr. Ellington was former chief of the El Paso field office of the Pan-American Sanitary Bureau and was secretary of the association in 1952.

Dr. Henry A. Holle, commissioner of health in the Texas State Department of Health, has been selected as chairman of the Texas State Committee for the association's meeting.

Officers are as follows: Dr. Guillermo Soberanes of Hermosillo, Mexico, president, Jefe Servicios Coordinados de Salubridad y Asistencia; Dr. Malcolm H. Merrill of Berkeley, California, president-elect, Director California State Department of Public Health; Dr. David M. Cowgill of San Benito, Texas, vice-president, Director Cameron County Health Unit; and Dr. Sidney B. Clark of El Paso, Chief of El Paso Field Office Pan American Sanitary Bureau.

Orthopaedic Treatment of Rheumatic Disorders

A course on the orthopedic aspects of the treatment of rheumatic disorders will be given for the first time by the New York University Post-Graduate Medical School for three successive Thursdays, from March 19 through April 2.

The basic orthopedic principles as they are applied in the treatment of rheumatic diseases will be reviewed. This course will include a well-rounded correlation of the means of orthopedically preventing and correcting deformities caused by rheumatic disorders. Office practice will be stressed. Extensive clinical material from the wards of Bellevue and University hospitals will be demonstrated.

For further information write: The Dean, NYU Post-Graduate Medical School, 550 First Avenue, New York 16, N. Y.

Texas Post-Graduate Dean to Speak at Fort Bayard

Dr. John S. Chapman, Assistant Dean of Post-Graduate Education and Professor of Medicine at the University of Texas Southwestern Medical School at Dallas, will speak March 6 at the Veterans Administration Hospital in Fort Bayard, New Mexico, to a joint meeting of the hospital staff and the Grant County Medical Society. His subject will be "Collagen Diseases".

American Trudeau Society Meets in May in Kansas City

The 52nd annual meeting of the American Trudeau Society, medical section of the National Tuberculosis Association, will be held in Kansas City, May 6 - 9, 1957, in conjunction with the annual meeting of the National Tuberculosis Association.

In addition to scientific sessions at which papers will be presented on current research, plans are being made for seven special lectures and four panel discussions. Topics for the latter will be tuberculin testing, fungous diseases, tuberculosis case finding, and the surgical approach to the bad chronic case of tuberculosis.

The lectures will be on cor pulmonale, chest injuries, hazards of radiation, tuberculosis in animals, histologic studies in smoking, mucovisidosis, and diseases of the diaphragm.

Cardiology Review

Two intensive review courses in cardiology for general physicians and internists are being offered by the New York University Post-Graduate Medical School on a full-time and part-time basis.

The part-time session (5410-A) will consist of seven meetings, from 2 to 5 p. m., on Thursdays, April 11 to May 23. In this course emphasis will be placed on clinical cardiology, with a detailed review of all the major forms of heart disease.

The full-time course (549-A) will start on May 6 and end May 24. It will include an intensive review of the basic knowledge and the recent advances in the diagnosis and treatment of heart disease. Electrocardiography is an integral part of the course and emphasis is to be placed on the modern electrophysiology of the heart.

For further details write: The Dean, Post-Graduate Medical School, 550 First Avenue, New York 16, N. Y.

Dr. W. A. Jones Elected . . .

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federal civil service employees, old age pensioners, those who are disabled under the Social Security Act, and veterans with both service and non-service incurred disabilities.

"Obviously, as the government pays a larger portion of the cost for health and medical care, the prospects for the complete nationalization of medicine will become even greater. We all are aware that the traditional American philosophy of the individual paying his own way, actually has lost substantial ground during the past 25 years. In 1929, for example, only 12 per cent of the cost of civilian medical care was borne by the government. By 1947, that figure had increased to 19 per cent. Now, almost one fourth of the cost of health and medical care is being paid with government funds. The United States Chamber of Commerce recently reported that the present outlay for civilian medical care is $14 billion per year. Of that amount, $3½ billion—or 24 per cent—is being defrayed by various governmental agencies.

Summary

"In summary, then, the Medicare program undoubtedly will produce better medical care for military dependents. But as the policy-making body of the Texas Medical Association has emphasized, it would have been far better to provide more sufficient salaries to servicemen. That would enable servicemen to pay for the medical care of their dependents. It also would keep the Department of Defense out of the field of medicine; and we believe, it would prevent further governmental encroachment upon the rights, privileges, and the responsibilities of the individual."

Coming Meetings

Temple Div., Univ. of Texas, Temple, Texas, March 4, 5, 6.

Orthopaedic Postgraduate Course, New York University Postgraduate Medical School, Mar. 19, Mar. 26, Apr. 2

AMA Medicolegal Symposium, Mar. 22 & 23, Cosmopolitan Hotel, Denver

American Academy of General Practice Scientific Assembly, March 25-28, 1957, in Kiel Auditorium, St. Louis.

Border Public Health Association, Apr. 9-12, Hilton Hotel, San Antonio

Cardiology Review Courses, New York University Postgraduate Medical School, Apr 11 - May 23, and May 6 - 24

Texas Medical Association, 90th Annual Session, April 27 - May 1, 1957, Dallas. Headquarters, Baker and Adolphus Hotels. Headquarters, Woman's Auxiliary, Statler Hilton Hotel.

American Trudeau Society, May 6-9, Kansas City

New Mexico Medical Society, May 15, 16, 17, 1957, in La Fonda Hotel, Santa Fe.

District 8, American College of Obstetrics and Gynecology, Reno, Nevada, May 27 & 28.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, 1957, in El Paso.

Texas Surgical Society, El Paso, April 7 & 8, 1958

ORIGINAL ARTICLES

Hay Fever in the Southwest Sun Country

By Albert H. Unger, M. D., El Paso

Hay fever in the Sun Country of the Southwest, comprising West Texas, New Mexico and Arizona, is a far different problem from that seen in other sections of the country. Most of this area has practically no Ragweed, so that many sufferers from Ragweed hay fever are greatly relieved when they first come to this area. Unfortunately, some develop symptoms within a few years due to the pollens of ragweed's cousins which are indigenous to this area. These include Russian Thistle, Carelessweed, Sage, Shad Scale and Burning Bush.

Natives of this area who develop hay fever are primarily sensitive to Tumbleweed and members of the grass family; although there are, of course, as many sensitivities as there are air-borne pollens. We have the usual three seasons here, plus two extra short ones. These seasons are shown graphically in Table 1 and compared to those for the northern U. S. The dates quoted are only approximate and vary somewhat from year to year.

Important Point

One important point, too often neglected in consideration of allergenic plants, is the relative potency of the individual pollens in sensitive individuals. It is impossible to accurately assay this factor, but it is safe to state that most tree pollen has a low index of potency. Mold spores are generally somewhat more potent; grass and Ragweed pollens are about equal and much higher than the others mentioned.

Russian Thistle pollen is vastly more potent than any of the others. There are certainly many individual alterations to this grouping; one patient may be tremendously sensitive to a certain tree pollen or mold spore. There are also botanical exceptions: Pine pollen is now considered completely innocent of all allergenicity, while Mountain Cedar ranks high in potency, probably near to or even above Ragweed.

Air-Borne Pollens

Only air-borne pollens (or spores) cause allergic symptoms in the average patient. Any plant with a pretty odor or color has it in order to attract insects, which accomplish the pollenization. The individual pollen grains of such plants are large, heavy and few in number. Only people in very close contact with such plants, mainly florists, avid amateur gardeners or horticulturists, prove sensitive to them. Occasionally, patients will demonstrate symptoms due to flowering shrubs right outside their bedroom windows.

Alfalfa, Clover and some other plants often blamed for symptoms have no allergenic pollen at all in the natural live state, since they have a trap-door arrangement by which the pollen is released only when an insect steps on the right spot. Of course, after harvesting and drying, they may lose this protective mechanism. The so-called "Rose fever" is not due to Roses at all, but is tree or grass hay fever which happens to occur when Roses are blooming.

Environment

In determining the causes of hay fever for an individual, it must always be borne in mind that he may be exposed in his own environment to an unusual allergen. Therefore, every patient must be questioned closely concerning occupational exposures and the flora around his own house. There may not be two Gingko Trees within a thousand miles of here, but he can be sensitive to them if they are in his yard. The history is even more important to the experienced allergist in determining the *clinical* causes of hay fever than are the skin tests. Skin tests themselves are sometimes worse than useless unless they are read and interpreted by a capable physician in the light of the history.

POLLEN GROUPS	NORTH CENTRAL	SOUTHWEST
Mountain cedar	- - - - - - - - - -	Oct - Nov or Feb - March
Other Trees	1 Apr - 15 June	15 March - 1 June
Grass	15 May - 15 July	1 May - 1 November
Fall Pollens		
Ragweed	10 Aug - 1 Oct	25 Aug - 7 Sept
Russian thistle & carelessweed	- - - - - - - - - -	15 July - 1 November
Mold spores	1 Apr - 1 Nov	- - - - - - - - - -

Table 1. Seasonal inhalants of the North Central U. S. (Chicago area as example) and Southwest (West Texas-Arizona-New Mexico).

Major Pollens:

1.) Tree pollen is the first of the major offenders to hit the air annually. Mountain Cedar, which affects relatively few people in scattered localized areas, has a separate season, mainly in February, but extending from late January into March. Around Big Spring, Texas, October and November are the main Mountain Cedar months (2).

Varieties of Cottonwood (Poplar) and Ash are found throughout the area, with stands of Oak, Mulberry, and Chinese Elm important local factors. Treatment should ordinarily be aimed at the local variety, since treatment with American Elm extract may not protect against Chinese Elm, for example. If a particular tree is present in one community, the patients of that area should be tested and, if neces-

sary, treated for it, even though it is insignificant elsewhere.

2.) Shrub pollen is a matter of local varieties, although Mesquite and Salt Cedar are fairly widespread. Mesquite properly belongs with the tree family, but is of debatable importance as a cause of hay fever; positive skin tests to it are rare in El Paso. Salt Cedar (Tamarix), Mock Orange (Syringa) and Privet (Ligustrum) may be important in some areas, particularly when they sit outside a bedroom window.

Grass Pollens

3.) Grass pollen season begins with a bang around the first of May and persists severely through mid-June. Mild amounts of pollen persist in the air until the first frost, with occasional severe flareups after rainfalls or dusty windstorms. Bermuda Grass is by far the most important, although Johnson Grass and Perennial Rye are frequently major factors. June (Blue) Grass is sometimes cultivated for lawns, especially in northern New Mexico; Timothy, which is not supposed to grow here, I have seen on well-watered lawns.

4.) Ragweed is infrequent and spotty throughout this area and is ordinarily of only minor importance; in a severe season, some transplanted northerners may have two weeks or so of mild symptoms. False Ragweed (Franseria) produces a lot of pollen (primarily in Arizona), but this is not highly potent and therefore not ordinarily an important cause of hay fever. Sage, a close relative, is also a minor factor.

Tumbleweed

5.) Russian Thistle is the most common cause of fall hay fever in this area, As mentioned above, it is highly potent to individuals sensitive to it; high Tumbleweed counts are not necessary for patients to have severe symptoms. This same factor makes it difficult to raise therapeutic desensitization dosages to high levels.

6.) Kochia (Burning Bush, Firebush, Mexican Fireweed) is becoming increasingly important as it invades this area. It looks like a small sparse Tumbleweed which turns red in October. It is believed almost as potent as Russian Thistle, although fewer people are sensitive to it as yet.

7.) Palmer's Amaranth (Carelessweed) is second in importance among fall pollens only to Tumbleweed. It is widespread throughout the greater Southwest and easily identified by its tall straight red-streaked stem and long (up to a foot) slim pollen stalks. Its sister, the rough (spiny, red-root) Pigweed is endemic to much of the country, including the northwestern United States.

Atriplex

8.) Atriplex (Shad Scale, Saltbush, Wing Scale) is important as a local factor. In El Paso, it ranks just behind the Carelessweed among natives. It is rarely a factor in patients transplanted here from other sections of the country.

9.) English Plantain is supposedly never a major factor in hay fever; the figures in Table 2 are not explicable on the basis of its known growth here. It is seen in irrigated areas, such as golf courses, but not all our patients are golfers.

10.) Molds are generally present but unimportant in this area. Patients exposed to indoor dust, old files, upholstering materials, etc., are liable to the same symptoms here as elsewhere. It is also possible that there are many molds in the pads of evaporative air-coolers, particularly when they are first turned on. These pads should be replaced at least at the beginning of each year of use.

Other Factors:

Adding to the woes of the hay fever victim can be many other factors; some of these are perennial in their allergenicity while others may cause or add to symptoms only during the pollen season. At such a time, when the patient is already having symptoms, emotional or physical factors can make the situation worse.

Thus, minor emotional tensions, ordinarily taken in stride, may cause hay fever flareups. Alcoholic beverages, which can cause a red nose when taken in excessive quantities, can lead to increased nasal congestion in a person with hay fever. Ordinary irritants, such as tobacco smoke, soap or detergent particles, industrial fumes, paint or perfume odors or road dust can magnify the woes of hay fever in season.

Food Symptoms

Foods can also cause or increase hay fever symptoms during the season. It has also been shown that foods can cause symptoms only at certain times of year without evidence of pollen sensitivities. Some patients find much greater relief from their sneezing if they avoid certain foods at times when they are having symptoms due to pollens. Skin tests may be helpful in this respect, although the clinical history is much more important.

In patients who have some perennial symptoms, accentuated into seasonal hay fever by pollen sensitivities, treatment with the perennial allergens will increase the amount of relief they can be afforded. Thus, house dust or perennial mold therapy should be administered, even though the perennial symptoms per se are not severe enough to warrant therapy. This can also be true of the less important year-'round allergens, including feathers, animal danders, kapok, pyrethrum and orris root.

Local Features

This area has several local features which affect hay fever. The general dryness can effect some people, although more are probably benefited than are harmed by it. The evaporative air-coolers seem to adversely affect certain allergic individuals. Three factors may be active here:

(1). Humidity changes seem to affect uncontrolled allergic individuals; such changes cause less trouble as desensitization takes effect, although we cannot explain why. There is no specific treatment for this.

(2). Circulation of allergens is accomplished by the coolers and fan, so that the dust and pollens are kept in the air, rather than settling to the floor. Some allergens are also sucked into the building by the fan.

(3). Molds may settle into the pads, as well as dust into the ducts during the winter.

Dust Storms

Dust storms cause great accentuation of symptoms in many individuals, although the main dust season precedes the pollen seasons (mainly March and early April). There are also three ways in which this factor affects patients:

(1). Irritation by blowing sand particles.

(2). Blowing of large amounts of pollen particles, sometimes picked off the ground by the wind.

(3). Bacterial particles blown in with the dust.

Treatment with specific bacterial vaccines or proprietary preparations such as Catarrhalis combined vaccine will frequently help control these symptoms.

Skin Tests:

As mentioned above, skin tests must be read and interpreted by a physician in the light of the history of that particular patient. Allergists do not agree on the type of test to be performed or even on how many to do. We feel that each patient should be skin tested for all inhalant factors found in his particular area, including pollens, molds, dust, animal danders and miscellaneous allergens.

These should be done routinely, even if the history is classical of sensitivity to one certain pollen. There is no time of year when there is only one allergen in the air; treatment for secondary factors is vital to obtain the greatest relief of symptoms.

In other words, if the history and tests reveal primary sensitivity to Tumbleweed, the patient should be treated mainly with Tumbleweed extract. If there are positive reactions of lesser degree to Carelessweed, he will be afforded more relief by treating with both pollens than with one.

Scratch Tests

Scratch tests are safer than intradermals and should be performed routinely. It is appreciated that scratch tests are often completely or partially negative and some intradermals are almost always required. Table 2 shows that many patients react to pollen scratch tests; no table can show the many very large reactions elicited during this series. Each of these tremendous scratch reactions could have been a severe constitutional reaction, had we done only intradermals.

There are certain inhalant and food allergens so potent that intradermal tests for them should never be performed, even with negative scratch reactions; cottonseed, castor bean and buckwheat have caused severe constitutional reactions and even deaths after intradermal tests.

None of us is perfect; we can occasionally fail to put the allergen directly on the scratch, giving a false negative reaction. For materials other than these few allergens, a negative scratch test permits safe intradermal testing with full-strength materials (usually 1:1000).

Food Skin Tests

Food skin tests can be performed whenever indicated by the history. It is entirely possible for food factors to be important in hay fever, causing or contributing to symptoms only during a pollen season. However, food skin tests are notoriously inaccurate, giving both false positives and false negatives.

All positive reactors must be checked clinically, by avoidance and re-feeding, before attaching any significance to them. We perform scratch tests for major foods, but complete scratches and any intradermals are done only when indicated by the history.

One important and oft overlooked precaution before doing skin tests: the patient must not be taking any medicines which might lessen his skin sensitivity. These include anti-histaminics, epinephrine, almost all anti-asthmatics and many "cold" tablets, as well as some nose drops.

Antibiotics, aspirin, potassium iodide, vitamins and the cortisone-ACTH drugs are safe. In patients taking many medications, it is better to have them avoid everything for four days before the tests, except as prescribed by the physician.

Inhalant Allergen	Scratch	Intra-dermal	Total Number	Per cent of Total	Per cent** of Reactors
Ragweed*	282	386	668	38	48
Franseria	278	---	---		
Marsh elder	232	---	---		
Prairie sage	276	---	---		
Russian thistle	361	631	992	57	72
Amaranth	218	621	839	48	61
Atriplex	72	556	628	36	46
English plantain	227	478	705	40	51
Grass	514	624	1138	65	83
Tree	387	429	816	46	59
Mold	245	409	654	37	47
NONE:			377	22	--

Table 2. Skin test reactions among 1751 unselected allergic patients tested 1954-56. All types of allergy are represented.

*In ragweed family, one intradermal test is performed, using a mixture of all members; scratch tests done separately, except that "ragweed" is a mixture of short and giant.

**Percentages are figured here of positive reactions among reacting patients; this excludes the "None" group.

Specific Treatment:

Avoidance, as far as possible, is the main tenet of allergic management. Only occasional hay fever sufferers can avoid any of the important causes. Children with hay fever should, however, be steered away from professions in which there is great allergic exposure, such as farming, baking, upholstering, etc.

Sometimes, adults have the opportunity to change professions from these to a cleaner occupation, but this can rarely be advised. Patients can easily avoid secondary offenders, such as Pyrethrum, Orris Root and animal danders. House dust should also be avoided as much as feasible.

Change of Climate

Change of climate is rarely an answer to anything, at least for very long. You cannot ordinarily run away from all plants which cause hay fever. Temporary relief is sometimes achieved, but many patients develop new sensitivities within a few years after relocation.

Damp or dry, low or high, city or country: it makes little difference over the long run. If, however, the opportunity presents itself for family relocation, there is available an excellent book (3) which will help you choose the best area for them — but warn them not to expect miracles.

Desensitization (more properly called hyposensitization) is an attempt to raise the patient's tolerance to those allergens he cannot avoid. The serum used is determined by the history and skin tests, with emphasis on the latter. Sometimes, special tests are indicated (conjunctival or inhalation).

Negative tests do not necessarily mean that the patient is not allergic, but may indicate only a non-reactive skin, as commonly found in older people. If the history connotes allergy, the extracts for treatment should be based upon the history; results are frequently excellent in this non-reacting group.

Clarifying Example

The ordinary patient with a hay fever history and positive skin reactions should be desensitized with a combination of all allergens important in his case, but not the reacting allergens which have no bearing on his symptoms. An example may clarify this: A patient is fine except for hay fever annually in September and October. Skin tests a large scratch reaction to Russian Thistle and large intradermal reactions to Carelessweed and tree pollen. He should be treated with extracts of Russian Thistle (obviously the main offender) and Carelessweed (a secondary allergen), but not tree pollen. He should be warned of potential tree hay fever, with treatment instigated for it only when, as and if tree-induced symptoms develop.

Initial Dosage

Initial dosage for desensitization procedures must be chosen with caution. Here are a few general rules for this (figures are weight to volume dilutions); start with:

1.) 1:100,000 dilution of scratch test shows moderate to large reaction.

2.) 1:10,000 dilution if intradermal reaction is moderate to large.

3.) 1:1 million dilution if scratch reaction is immediate and very large.

4.) 1:1 billion dilution if you must treat with cottonseed or castor bean.

5.) Next weaker dilution to any of above if treatment is started during height of the pollen season.

Initial dosage is 0.10 cc of the selected dilution, given subcutaneously. If there are no reactions (see below), subsequent dosages are increased roughly 50 per cent each time. Thus, a standard dosage scheme for a given dilution would be 0.10 cc, followed by 0.15, 0.22, 0.30, 0.45 and 0.70 cc; the next injection would be 0.10 cc of the next stronger dilution. At 1:100 dilution (or stronger), doses are raised 0.02 cc each time.

The interval between injections depends on the time remaining before the onset of the next pollen season. An attempt should be made to reach a dosage of 0.10 cc of the 1:100 dilution at the start of the season.

Reactions

Reactions to injections do occur, despite all precautions. Patients should always be asked about reactions after the last visit before giving today's injections. They should then be kept in the office for fifteen minutes after treatment, after which the arms should be inspected for local reactions.

Notes should be made on the chart concerning any untoward reactions. Proper attention to local reactions can preclude systemic ill-effects. A red area about the size of a quarter indicates that the same dosage should be repeated next time. Reactions larger than that, or with a moderate to large white center, mean that the next dosage should be reduced about 25 per cent.

Categories

Systemic reactions fall into the following categories:

1.) Immediate severe allergic or anaphylactic reactions; these almost always occur within the first fifteen minutes. Epinephrine 1:1000 should always be immediately available; 0.50 cc epinephrine, combined with an injectable antihistaminic, such as 0.50 cc Benadryl (R) or 0.10 cc Chlor-Trimeton (R) (100 mg/cc) should be given at the first sign of such a reaction. This can be repeated, although it is rarely necessary.

2.) Immediate mild to moderate allergic reactions are characterized by sneezing and/or hives. This is usually controlled by an oral antihistaminic plus ephedrine, such as Pyribenzamine with ephedrine (R). Observe the patient closely for an hour or so to make sure more severe symptoms do not develop.

3.) Delayed allergic symptoms, such as accentuation of hay fever or asthma or development of hives; this ordinarily occurs within 24 hours,

but may be delayed as long as three days. Oral antihistaminics usually control such symptoms; ephedrine should be used for asthma.

4.) Delayed non-specific symptoms can also occur within three days; they include headache, malaise, inability to think clearly, including poor schoolwork and giddiness. These cannot be called reactions to injections until and unless they occur more than once — but watch out for them.

Desensitization Injections

Recently, desensitization injections have been combined with antihistaminics to try to prevent reactions. Sometimes, the only result is that reactions are delayed until the patient has left the office. Occasionally, in experienced hands, the combination is helpful, but only in a few selected patients; it should not be used routinely (or the older combination of injections with epinephrine). The cardinal rule of all desensitization procedures is that each allergic patient is a world unto himself and must receive individual attention.

Non-Specific Treatment:

Antihistamines are now very widely used for treatment of nasal allergy; the choice of preparation rests with the individual physician. When a patient is given any new antihistaminic, he should be warned about its possible soporific effects. We never know which patient will become drowsy from which medicine. Benadryl (R) in particular makes an excellent sleeping capsule; the 50 mg capsule should never be given for daytime use.

Ephedrine and its cousins, such as phenylephrine, desoxyephedrine and Propadrine (R) have definite uses in hay fever, alone or in combination with antihistaminics. Many capsules and tablets are now available. Highly potent and palatable liquid combinations include Novahistine (R), Chlor-Trimeton Compound (R) and Co-Pyronil Suspension (R).

Nose Drops Seldom Helpful

Nose drops are seldom helpful in ordinary hay fever; patients should be discouraged from their use, except under extraordinary conditions. Sinusitis secondary to hay fever should be treated with systemic and local antibiotics; the intranasal preparation should include a nasal decongestant, topical antibiotic (not one used systematically) and, at your discretion, a cortisone preparation.

Eye drops are sometimes necessary for symptomatic relief. Epinephrine preparations are the standby, but others provide excellent relief, including Estivin (R). Cortisone preparations can also be used.

Cortisone preparations and ACTH should not ordinarily be used for treatment of hay fever. They should be reserved for those patients in whom immediate relief is essential because of the extreme severity of symptoms, presence of complications or the type of work in which the patient is engaged.

For example, a man who works with a microscope cannot do so with runny eyes; a singer cannot sneeze and sing at the same time — they may need cortisone to permit normal work. Ordinarily, however, try other medicines first before the hormone drugs.

Results of Therapy:

There are three objectives of treatment:

1.) Prevention of natural progression of the disease, in particular the development of asthma. This can be achieved in almost all patients.

2.) Comfort, defined as the reduction of symptoms to the point at which the patient can work and carry on normal activities with minimal allergic symptoms. This can be achieved in better than 75 per cent of patients.

3.) Complete symptomatic relief; this can only be achieved in about one third of patients and should not be expected in any one individual.

Treatment should ordinarily be continued through at least two full pollen seasons, sometimes longer. The results make this worth while.

Summary:

1.) Hay fever is a problem in this area, although there is little Ragweed. Main allergenic pollens include Russian Thistle, Bermuda Grass and Carelessweed, with Johnson Grass, Kochia, Atriplex and tree pollens secondary offenders.

2.) Skin tests should be performed by the scratch and intradermal methods, interpreted by a physician in the light of the history. Food tests are inaccurate.

3.) Desensitization therapy is effective and, with precautions, safe. Miracles must not be expected and treatment must be carried on for a long period of time.

4.) Antihistamines, ephedrine and ephedrine-like drugs give symptomatic relief. Hormone preparations should be reserved for exceptional circumstances.

5.) Climate change is ordinarily no answer to hay fever.

6.) Relief of symptoms to the point at which the patient can carry on normal activities can be expected, although not promised.

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The PR Indoctrination Program — A Necessity*

By Andrew M. Babey, M. D., Las Cruces, N. M.

In 1955, the journal "Medical Economics" made a survey of County Societies to sample the status of membership relations and the nature of any discord. Its study revealed too much misunderstanding and too little effort being made to correct existing conditions. From young members of County Societies they got such statements as:

1. I don't know where to start.
2. I don't know how to get in touch with the professional community.
3. I don't know how to fit in with local medical customs and activities.

From older members they got such remarks about younger men as:

1. Overcharging.
2. Snatching patients.
3. Publicly criticizing colleagues.

It was felt that indoctrination of new members and older members alike could erase many if not all of these problems; that indoctrination, already practiced on a limited scale, should be expanded to cover all County Societies. The need was of course felt by the A. M. A. and State Societies even before the survey; —but this public expression of a wide and important rift, gave impetus to the Indoctrination Program.

Object Of Indoctrination

The objective of the P-R Indoctrination Program is instruction in the rudiments and principles of medical organization and ethics. This program tries to give each physician a sense of belonging to a live and useful organization; it tries to emphasize each man's responsibilities and duties not only to his patients but to his County Society. Dr. Murray, President of the A. M. A., stated it well in the Rocky Mountain Medical Journal for January, 1957:

"The road to apathy and disunity can only lead to disorder and perhaps disintegration; and we must sound a warning to all our colleagues who don't care or who are pulling in the opposite direction. The road of alertness, action and unity is the proper road for all of us to be travelling together."

A few questions automatically spring to mind. The P-R Indoctrination Program is relatively new. It is really necessary and if so why? It would seem that our predecessors did not need any such plan. Is this true? Are we as a profession more mercenary, callous, lazy and obstinate? Why is it that in spite of an improved scientific position with much more to offer the public, our personal relations with this same public appear to have deteriorated? Is this new weakness in our profession or new strength in a demanding, socially-awakened public?

One Answer

I don't presume to have the answers to any of these questions, except one: As a member of the no-longer-a-spring-chicken class I can testify that indoctrination was needed at least in the 1940s. As to the other questions, perhaps at least for practical purposes, we should admit there is much to be said on both sides.

As for us, about a year ago I talked with a physician who for 15 years has been in charge of the Neuropsychiatric Section in a well-known Eastern Clinic. Around 35 Fellows pass through his department in the course of a year. He surprised me by saying that recently no more than four or five of these young men showed a solid interest in their work, a much smaller percentage than ten years ago. His explanation for this lassitude was that these men were victims of the current socio-economic revolution.

Also, about a year ago I talked with an Emeritus Professor of Obstetrics, from Dr. Adler's Alma Mater, about the reasons for the increasingly hostile feeling of the public for our profession. As a member of a grievance committee in the East he noticed that complaints centered mostly about the inability of patients to locate doctors on week-ends.

Constructive Examples

I mention these examples in a constructive rather than deprecatory way. There is no denying that on the whole we pull our weight and are conscientious. But even if we grant that only a small minority is causing trouble it behooves us to put our house in order, so that all shall not suffer.

And as I see it, this is the one big objective of the P-R Indoctrination Program. To illustrate its present broad scope I should like to review some of the most important steps being taken in various parts of the country to promote the P-R Indoctrination Program. You will understand that no one state or county now has all the platforms I shall list; but this birds-eye view of the wide coverage of the P-R Indoctrination Program will give you some conception of the thought that has gone into it, and some idea of what *we* here can do. All this material is published by the A. M. A.

Students Indoctrinated

You may be surprised, as I was, that medical students are being indoctrinated in some states. The State Society gives senior students a luncheon, shows some

*This paper was delivered by Dr. Babey at the regional meeting of the New Mexico Medical Society's public relations committee in Las Cruces Jan. 19, 1957.

pertinent movies, and gives a few practical lectures covering such things as

(1) Your Practice and Public Opinion

(2) You and the Medical Society

(3) The Legal Aspects of Your Practice and

(4) The Business Side of Practice.

You may also be surprised, as I was, that older Society members ask for and get indoctrination. I might add that in some places they get it even without asking for it! The P-R Program tries to remind older members to be less clannish, less intolerant of young members who express their opinions, to be more understanding and more cooperative. Even though the P-R Indoctrination Program is aimed primarily at new members there is good sense in its including older ones, as you can see from the following.

Surgeon Tells Story

In the December, 1956 issue of Rocky Mountain Medical Journal Dr. Leland McKittrick, a distinguished surgeon and teacher, tells this story: "Early this summer a young man asked if he might come to my office and talk with me about a personal matter. Briefly, he told me he had been a general practitioner in one of our eastern cities.

"He wanted to do surgery and after a thoughtful consideration of the time and expense involved, decided to give up his general practice and use his savings to get a proper surgical training. He was fortunate enough to get into a training program which he was about to finish, and which would make him eligible to take the examinations of the American Board of Surgery.

"He had been born and brought up in the town in which he had practiced and planned to return there. This spring he went back to begin arrangements for his office and hospital privileges.

Privileges Withheld

"He was told that he could not be given hospital privileges in surgery unless he was sponsored by one of the three surgeons of the staff, all men he had known and worked with when he was in general practice. For one reason or another each found it impossible to do this.

"He had obtained his surgical training at great sacrifice to him and his family. That city had always been his home and he wanted to go back. Did I have any suggestions? As I listened to this young man, as I have listened to others who have had the same brush-off, I could not but wonder whether the staff of the hospital was really fulfilling its obligations to the hospital and community or if it might not have been more interested in protecting its own selfish interests."

Denied Basic Right

It might be a little hard to indoctrinate such a physician, and to tell him to be a "good fellow", while at the same time he was being denied the right to earn an honest living.

Discussing the other side of the coin, Dr. McKittrick goes on later to say: "We are all trying to reestablish the family physician in his proper place in our medical care program. Of these efforts I am a staunch supporter. In many of our hospitals today, he has been denied all privileges except making social calls on his patients. In some hospitals he may no longer apply a low forceps or even do a normal delivery. He may not suture a minor laceration or reduce a simple fracture."

These are serious problems which need early solution, and no one can solve them but the profession at local and state levels. Nothing will be accomplished by one group hurling bricks at the other.

New Members

Next we come to the Indoctrination Program as it relates to new members. Some states now require a waiting period of six months to two years before accepting a man as county society member. During that waiting period he is obliged to attend six lectures covering "basic principles and responsibilities." Some counties make a very nice personal contact with the new member using a (1) welcoming letter from the president, (2) luncheon or cocktail party, and (3) designation of a sponsor to guide and advise the new-comer,

In addition to these, the P-R Indoctrination Programs stress heavily an "instruction phase" using lectures and printed material. The following is a fairly comprehensive table of this subject matter:

(a) "The Small Arts of Practice."—Appearance, personal habits, professional demeanor.
(b) Licensure
(c) Narcotics Laws
(d) Ethical Principles—Doctor and Doctor, Doctor and Patient
(e) Hospital and Sickness Insurance — Participation in voluntary pre-payment programs.
(f) Workmen's Compensation and V. A.
(g) Laws Governing Medical and Surgical Practice.
(h) Aims and Activity of Local Society.
(i) Membership Data — Advantages of County and State Membership.
(j) State Forms for Doctor's Employees.
(k) Check List — Things to Do Before Starting a Practice.
(l) Medical Legislation.
(m) Structure and Function of Organized Medicine.

(Continued on Page 198)

Prevention and Treatment of Blood Transfusion Reactions* †

By Marvin J. Friedenberg, M. D., New England Center Hospital, Boston

The transfusion of blood is one of the most frequently employed and amazingly effective therapeutic agents available in the practice of medicine today. It alone has been responsible for the saving of untold numbers of lives through its direct administration in acute and chronic medical and surgical conditions. In addition, it has made possible the performance of innumerable surgical procedures which otherwise would have been inconceivable.

Yet blood transfusion is a mixed blessing, and the utilization of this therapeutic agent carries with it a grave responsibility on the part of the physician. This is because of the wide variety of complications, some of them potentially fatal, which may result from the transfusion of blood and which must be seriously considered at all times.

No Accurate Method

There is no accurate way to determine the exact frequency of blood transfusion reactions. Comparison and compilation of reported statistics are inaccurate because of lack of standardization of prophylactic, diagnostic, and administrative procedures, as well as the constant introduction of newer, more efficacious techniques in the field of blood transfusion.

For example, the observers performing one study[1] uncovered by daily evaluation of transfusion recipients a total of 55 transfusion reactions. However, only 10 of these had been reported to them by the other members of the hospital staff, all of whom had been given a standing order to report all reactions. Under these circumstances the records of this hospital would have shown only one-fifth the number of reactions that actually occurred had they alone been consulted.

Statistics Desirable

In spite of the obvious inadequacies which may be inherent in the compilation of such data, it seems desirable to present some of the statistics reported in the literature in order to emphasize the great frequency of, and dangers involved in, the transfusion of blood.

It has been stated[2,3] that blood transfusion has a higher mortality rate than an uncomplicated appendectomy or the administration of ether anesthesia. It has been estimated that one death is produced by the administration of every 1-3,000 transfusions,[2,3] although another report[4] claims only one death to have resulted from the transfusion of 13,000 bottles of blood.

On the other hand, the incidence of transfusion reactions of all types was stated[5] in 1922 to be 25.4 per cent. More recent estimates (1940, 1951, 1949) have been considerably lower, two claims[6,7] of between three and four per cent having been made, as well as one report[8] of 4.8 per cent in a series of over 2400 transfusions.

Regardless of the precise frequency of reactions, when one considers that approximately 3,000,000 transfusions are given each year in the United States,[9] the magnitude of the situation may easily be appreciated.

Six Categories

In the following discussion the broad field of transfusion reactions has arbitrarily been subdivided into the following six convenient categories and each will be discussed in turn:

(1) Reactions due to abnormal PHYSICAL PROPERTIES of the transfused blood.
(2) Reactions due to an upset in the BODY HOMEOSTASIS caused by blood of either normal or abnormal composition.
(3) PYROGENIC or "febrile" reactions.
(4) ALLERGIC or anaphylactoid reactions.
(5) Reactions due to the transfusion of INFECTIOUS DISEASE AGENTS, including bacteria, viruses, spirochetes, and protozoa.
(6) Reactions caused by INCOMPATIBILITY of recipient and donor blood, including incompatibilities with respect to erythrocytes and possibly platelets.

There may be close similarities in the clinical manifestations of the various reactions, often making the differentiation of one type of reaction from another an extremely difficult task. For example, chills, fever, or shock may be present in any one of several different reactions.

Pyrogens, or metabolic products of bacteria, are the commonest cause of chills and fever following the transfusion of blood, but these symptoms are of much shorter duration and of less intensity when produced in this manner than when they are associated with the initial stages of an incompatible blood transfusion reaction.

The chills and fever which may be produced by the infusion of bacterially contaminated blood are usually of less significance than the associated shock, and those resulting from an allergic reaction are usually delayed in onset.

Particular Difficulty

It may be particularly difficult to distinguish a mild reaction of one type from a more severe reaction of another category. Familiarity with the etiological factors operative in the production of each type of

*The article presented here is the first of three sections, the others to be presented in two subsequent issues.
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reaction and the clinical manifestations that characterize each are essential to the proper diagnosis and treatment of transfusion reactions.

One cannot emphasize too forcefully the dangers inherent in blood transfusion. It is recommended[4] that the transfusion of blood be avoided if at all possible, to the extent that plasma expander be administered, if it is anticipated that only one pint of blood will be needed.

At all times a careful history should be elicited prior to each transfusion, including questions regarding the occurrence of previous reactions and erythroblastosis fetalis in an offspring.[4]

Physical Properties

Transfusion reactions may occur as a result of abnormal physical properties of the infusion set, including imperfections which permit the entrance of air into the system, or factors which alter the physical properties of the donor blood itself.

Among the latter are those which may produce extravascular hemolysis,[8] including mixture of the donor blood with dextrose solution or the addition of hypo- or hypertonic solutions to the blood, as well as abnormal temperatures (freezing, heating) or storage conditions (prolonged, improper) of the administered blood.

Mechanics of Collection and Administration

The actual mechanics of blood collection and administration play an important role in the prevention of transfusion reactions. If blood enters the collection flask under high velocity, as may be the case when the vacuum type of collection set is used, hemolysis may result with precipitation of fibrin clots.[10]

This may be prevented by adjusting the flow rate of the blood to a degree not exceeding 50-75 ml/min and by inverting the flask during the collection.[10] It is claimed[10] that increased cell destruction may also be produced by too vigorous mixing of diluent and blood prior to administration. Also recommended[11] is the employment of a plastic bag receiving set to minimize the undesirable effects produced by glass and air interfaces.

Proper Design

The proper design and insertion of the venipuncture needle have also received some attention.[13] Venesection needles may be given non-wetting or platelet-repellent properties by utilizing stainless steel needles on whose surfaces are applied thermostable monomolecular coatings of silicone.

In addition the occurrence of clotting during the venesection may be reduced by using needles whose shape is modified to decrease turbulence and eliminate air entrapments. Finally, it is recommended that an effort be made to perform a nontraumatic venipuncture in order to eliminate as much as possible the potentiating effect of tissue activator on the clotting mechanism.

One report[14] states that terminating the administration of intravenous infusions, including blood, as quickly as possible and not permitting them to run more than 8 hours reduced the incidence of thrombophlebitis from 52 per cent to 4.5 per cent.

Gas Embolism

This is always a potential danger in blood transfusion, particularly when oxygen or another gas is used to administer the transfusion under pressure.[10] It goes without saying that extreme care should be taken when blood is given by this method.[15]

However, the need for special techniques to accomplish the rapid administration of blood may be obviated by simply utilizing tubing long enough to permit the full effect of gravity.[10] In addition a large needle should be used; some observers[15] claim cell destruction may be prevented only by using a size number 16 or larger needle.

Alternative methods include the manual pumping of blood through a giving system incorporating a three-way stopcock, the utilization of a De Florez pump (there is reputedly a low risk involved with a rotary pump[17]), or the application of manual pressure to a collapsible plastic bag containing acid-citrate-dextrose (ACD).[10]

It might be mentioned here that a serious but nonfatal case of air embolism occurred as a result of air entering the transfusion system through a piece of unguarded open plastic tubing during the course of an exchange transfusion for erythroblastosis fetalis.[18]

Hypo- or Hypertonic Solutions

The mixing of citrated whole blood and an aqueous solution of glucose may be responsible for the phenomenon of agglutination or rouleaux formation of erythrocytes within the tubing of the transfusion set or a transfusion reaction (chill, fever, nausea, collapse) in the recipient of the blood.[19,20]

This phenomenon occurs with all blood types and in all concentrations of glucose, but only in the absence of electrolytes from the medium.[19] The addition *in vitro* of a few crystals of NaCl, a small amount of isotonic saline, or even some blood plasma to the red cells agglutinated in this manner results in the immediate dispersion of the cells[19] and attests to the reversibility of this phenomenon.[19,20]

Nevertheless, the danger of extravascular hemolysis as a consequence of increased red cell fragility has been pointed out.[8] It is strongly urged[10,19,20] that whole blood or packed or resuspended red cells should not be allowed to mix with an aqueous solution of glucose in any manner during their collection, storage, or administration.

This, of course, also precludes the use of aqueous dextrose (but theoretically not dextrose and saline)

as an intravenous fluid preceding the administration of blood.

Temperature and Time of Storage

Although no harm apparently results from the infusion of blood having a refrigerator temperature, it is recommended that blood be allowed to stand in a warm room for one hour prior to administration to prevent venous spasm and rigours attributable to cold agglutinins.[21]

The infusion of frozen blood has its obvious dangers,[21] and on the other hand, a fatality has been reported[22] to have occurred following the administration of blood which had been excessively warmed. The ideal situation would be to warm blood removed from the storage refrigerator under controlled conditions by means of a thermostat or thermometer.

Gradual *in vivo* destruction of red cells made more fragile by prolonged or improper storage may occur following transfusion, but the resulting reaction is characterized by neither shock nor renal failure.[10]

Nevertheless, considerable harm may come to the recipient as a result of the infusion of blood altered in this manner.[10] Before a diagnosis of this type of reaction is made, the occurrence of an incompatible transfusion reaction must be excluded by appropriate type and cross-match studies.[10]

Body Homeostasis

The upsets in body homeostasis that may occur as a result of blood transfusion may be conveniently divided into three categories — namely, those due to electrolyte imbalance, those due to overloading of the circulation with an excessive volume of fluid, and finally, a miscellaneous group of reactions.

Electrolyte Imbalance

The electrolyte content of banked blood is influenced by the donor's blood electrolyte levels, the anticoagulant solution employed in processing the blood, and finally, the temperature, time, and other conditions of storage.[23] Under ordinary circumstances, whatever electrolyte changes that are produced in the recipient are within his limits of tolerance for several reasons.[23]

In the first place, when a recipient of average weight receives one unit (500 ml) of blood, the apparent discrepancy between donor and recipient electrolyte levels must be diluted approximately ten times, since the blood volume administered represents only 10 per cent of the recipient's normal blood volume.

Secondly, the body homeostatic mechanisms of the recipient in most instances are operating simultaneously to correct any deviations from normal electrolyte levels that may be produced by the infusion. However, under certain specific circumstances significant abnormalities may be produced.[23]

These include the infusion of too large a volume of blood or the too rapid administration of a reasonable volume, as well as the presence in the recipient of a disease state which adversely affects his capacity to maintain body homeostasis with respect to electrolyte balance.

Change In Shape

A tendency for red cells to change in shape to spherocytes and a progressive osmotic hemolysis are some of the changes reported[26] to occur in stored blood. Other findings[23] have been summarized as follows:

Table 1

			Freshly drawn	10 days old	20 days old
1.	pH		7.1	6.7	6.6
2.	Lactic acid		20	80	125
3.	Potassium mEq per liter	cells	85	75	68
		plasma	5	12	18
4.	Sodium mEq per liter	cells	18	22	30
		plasma	155	152	148
5.	Inorganic phosphorus mg per 100 cc	cells	5	20	25
		plasma	3	5	8

In addition it was judged[24] by various indices that the state of red blood cells after 8 days' preservation in citrated blood was approximately equivalent to that of 18 days' preservation in neutral citrate glucose and 33 days in ACD solution. The latter solution is made by utilizing the following mixture of ingredients per bottle of blood: 2.45 gm dextrose USP, 1.37 gm Na citrate USP, and 0.5 gm citric acid USP added to distilled water to make 120 cc.[1] Its efficacy as a preservative is strikingly confirmed by the above report.

It has recently been reported[25] that hyperkalemia in the absence of clinical signs and symptoms of this abnormality was aggravated in one and induced in two erythroblastotic infants treated with exchange transfusions within the first 36 hours of their lives.

This was stated to be the result of the elevated plasma potassium content of citrated whole blood stored for a prolonged period of time, prompting the recommendation that fresh blood be used in exchange transfusions.

Hypocalcemia Produced

It has also been noted[26,27] that hypocalcemia may be produced during the exchange transfusion of infants, a decreased serum ionized calcium having been noted subsequent to replacement transfusion with citrated whole blood. The hypocalcemia is believed[18,27] to develop as a result of the calcium binding effect of citrate.

The existence of the hypocalcemia has been confirmed by EKG findings.[27,28] Therapy with intravenous calcium gluconate slowly or in divided doses is recommended[18,25–29] during or at the conclusion of the transfusion. The intravenous infusion of calcium gluconate reverses the hypocalcemia.

This has been confirmed by one observer[27] who noted that 10 per cent calcium gluconate relieved the

muscular tremors that occurred after each 100-150 cc of an exchange transfusion was administered. In an exchange transfusion slow administration of 1 cc of 10 per cent calcium gluconate is advised[18] after the infusion of each 100 cc of donor blood, the giving apparatus first being cleaned with 1-2 cc of saline.

However, it is possible for hypercalcemic changes to develop if 1 gm of calcium gluconate is administered within a time interval of less than 5 minutes, and it is recommended, therefore, that this therapy be given over a period of at least 5 minutes.[28]

The threat of the development of hemosiderosis[30,31] as a result of the repeated administration of blood to the same individual must always be borne in mind.

Circulatory Overloading

Overloading the circulation to an extent sufficient to precipitate right heart failure may occur as a result of either too rapid or too large an infusion of blood or improper selection of the substance transfused.[10,17] The reaction which develops may do so during or hours after the completion of the transfusion.[10]

It is characterized by an elevated venous pressure and the development of pulmonary edema which may be fatal within minutes.[10,32] An elevation of the jugular venous pressure should be considered evidence that the circulation is being overloaded by the transfusion and is an adequate indication to stop the infusion.[17]

Prophylactic Precautions

The care with which prophylactic precautions are undertaken against this complication should be directly proportional to the physical condition of the individual patient receiving the transfusion and the particular disease affecting him, although the physician should always be aware of the possibility of this reaction occurring.

There are four types of patients in particular who should be given special consideration if a blood transfusion is proposed: (1) elderly patients, (2) those in congestive heart failure or with a decreased cardiac reserve, and (3) those with uremia or (4) a profound anemia. In the latter instances the red count and hemoglobin may be low, but the patient has a normal blood volume due to a compensatory increase in the plasma fraction.[34]

The administration of a very large additional volume of blood (enough to correct anemia in one transfusion, for example) may easily result in circulatory overloading.

Four Procedures

There are at least four prophylactic procedures which may be undertaken to minimize the chances of circulatory overloading. One is simply the precaution of being certain not to administer more blood than is needed or has been lost.[17]

Another is the slow infusion of the blood that is given, a rate of infusion of less than 40 drops per minute being advocated.[10] A third is the proper selection of the material to be infused. The administration of packed red blood cells often succeeds in accomplishing the object of the transfusion without necessitating the infusion of too large a volume of material.

The fourth prophylactic measure is paying careful attention to the osmolarity of the various materials which may be administered intravenously and the ability of these substances to draw fluid into the circulation from the tissues.[10]

Intra-Arterial Route

At this point mention might be made of the availability of the intra-arterial route of blood infusion, the utilization of which may rapidly restore systolic blood pressure without overloading the right heart.[33]

However, this method of blood administration is rarely justified except in cases of cardiac arrest, because of the imminent danger of the development of such complications as arterial spasm and gangrene of the limb.[34]

The therapy of circulatory overloading as a reaction to blood transfusion is simply the immediate discontinuation of the infusion and institution of the usual treatment of heart failure.[10]

Gravity Method

It has been estimated[17] that the gravity method of transfusion permits the intravenous infusion of only 70 ml of stored blood per minute when it is placed at a height of 4 feet. To provide a greater rate of administration multiple transfusions or delivery of blood under pressure is required.[17]

Physiological studies[35,36] of changes in blood pressure and volume as well as intra- and extravascular fluid indicate that a rapid readjustment in body homeostasis occurs following both the slow and rapid infusion of blood. Providing that the available quantity of blood satisfies a certain minimum requirement, the level of blood pressure was found to be more dependent upon the degree of sympathetic activity than upon the total blood volume.

Rotary Pump

A rotary pump and specially designed straight silver cannula have been described,[17] each of which permits the delivery of 350 ml of blood per minute, the former under approximately fourfold greater pressure. At this rate the normal stroke volume of the normal heart was found to increase only 9 per cent. However, it is warned[17] that this technique may produce circulatory embarrassment in the presence of an abnormal heart. Also, in the presence of vasoconstriction, no more than 70 per cent of the estimated blood loss should be replaced by the technique of rapid transfusion. In addition local venous thrombosis is mentioned[17,37] as a common but not serious sequel of pressure transfusion.

Miscellaneous

Among the miscellaneous group of reactions that may occur as a consequence of blood transfusion is the phenomenon of decreased red cell production.[38-43] Recent experimental evidence[44] from tracer studies on rats confirms this fact, depression of erythropoiesis as measured by a decreased red cell iron turnover having been demostrated following the increase in red cell volume produced by transfusion.

Another report[45] showed that the blood protein composition as determined by electrophoresis approached normal following blood transfusion. However, it is warned[39] that blood is not a rapidly utilized form of protein and cannot completely replace insufficient hemoglobin until the entire nutritional status of the recipient is corrected.

Thrombotic Episodes

The arterial or iatrogenic polycythemia which may result in some recipients of blood transfusions[38] may be responsible for the development of thrombotic episodes[46] and in addition may make the patient a greater anesthetic and surgical risk.[47]

Although it has been reported[33] that no dire results were observed to occur during autotransfusion, in spite of the fact that small amounts of bile, feces, urine, or ascitic fluid contaminated the fresh blood, this procedure should only be employed as a last resort in grave emergencies.[10]

Severe hemolysis of red cells and liberation of excessive quantities of hemoglobin, which occur as a result of the high negative pressure or violent mixing of air and blood necessary in this procedure, endanger the patient.[10]

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Variation on a Theme: The Continuous Lock-Stitch Mark II

By Charles E. Galt, Jr., M. D., Carlsbad, N. M.

While studying the traditional, "blanket," or "running lock-stitch," and envisioning a vertical component on both sides of the incision requiring but a single needle for its execution, it was found that by using a two-strand suture, and locking only one of them, in essentially the same fashion as the original technic, a novel effect could be got.

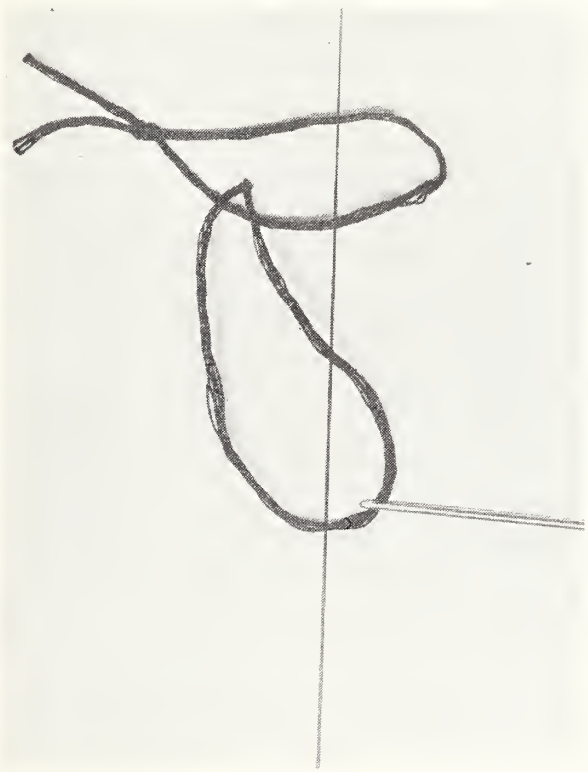


Figure I
Anchoring the Stitch

The result, as pictured, continues to yield a single vertical "arm," but the horizontal feature of the stitch has increased from a single, transverse, to two, oblique strands. It is reasoned that the increased "coverage" of the wound by the two oblique strands, involving no increase in the number of skin punctures, offers an advancement in wound closure requiring essentially no additional surgical effort.

The technic is identical with that followed in the original "blanket stitch," except that with the employment of two strands, the assistant needs not only hold the strand for locking, but also to separate the two strands, insuring that only one is locked.

For the separating of strands, and locking of one, it matters not in what manner each strand is treated during successive stitches. Care must be exercised as with all running stitches to avoid undue tension, and experience with this innovation emphasizes caution against the tendency toward inversion of wound edges.

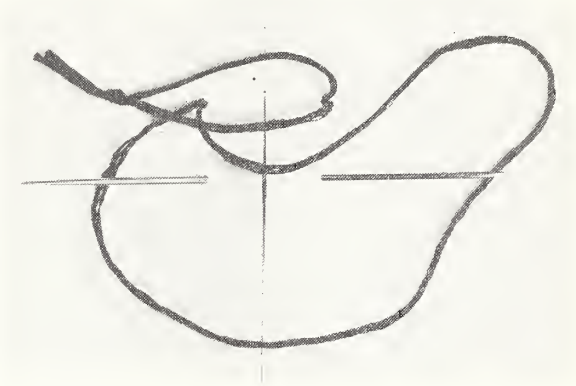


Figure II
Strands Separated and "Locking" One

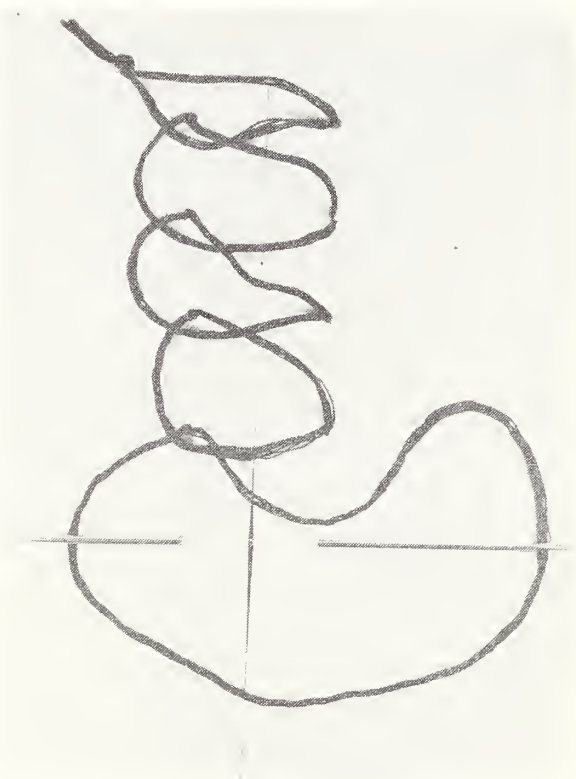


Figure III
The Stitch, Not "in Vivo"

(Continued on Page 199)

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

January 17, 1957

FREDERICK P. BORNSTEIN, M. D. — EDITOR — CASE NO. 741

PRESENTATION OF CASE BY DR. NATHAN KLEBAN

Dr. F. P. Bornstein:

For this particular pathological conference we are going to have a slight change in procedure. Pathology is concerned with the nature of disease. From that standpoint, any disease is an experiment, an experiment in pathologic anatomy and pathologic physiology, the result in a fatal case being demonstrated at autopsy.

With the advance of medical knowledge, these experiments have been actively interfered with. A disease picture evolves that is completely different from the natural course of the disease. The physician who recognizes the disease from the symptoms at the beginning can change the course of the experiment.

This being the state of affairs, there are many classical pictures of disease that we do not see any more. However, occasionally the disease pure and simple without medical interference will present itself, and for many reasons such a case is worth reviewing.

Dies After Admission

This particular process concerns a 35-year-old woman who came to the hospital and died two hours after admission. She was seen here in 1951 for a fracture and at that time was in excellent health. Three years before admission she noted enlargement of the thyroid but refused to see any physician. As far as we know from the time that enlargement of the thyroid was noted until death, this patient never had any medical advice.

For the last three months she had difficulty in swallowing, she was unable to eat, her eyes protruded, she became nervous and excitable. When she came here she was deeply jaundiced, she had a pulse rate that varied between 100 and 200, her blood pressure was 130/50, and she died within two hours of admission.

Significant Findings

On autopsy the significant findings were as follows:

She was about 150 cm. long and weighed about 45 kg., which is not too well nourished. She was jaundiced, and the neck was swollen. The heart weighed 275 grams, which is an important feature because usually in a thyrotoxicosis we expect cardiac hypertrophy, which was missing. The liver weighed 1100 grams which is rather small, and had a small, shrunken appearance. The thyroid weighed 80 grams and all three lobes were enlarged.

On microscopic examination the thyroid showed the typical picture of an untreated toxic adenomatous hyperplasia (Fig. 1). The microscopic examination of the liver showed extreme vacuolization of the cytoplasm, indicating a severe toxic type of damage.

In summary, we are presenting here a patient who suffered from thyrotoxicosis for three years, remained untreated during the entire time, and finally very rapidly collapsed and died. Clinical interpretation of this case will be given by Dr. Kleban.

Dr. Nathan Kleban:

At the time of two important events of her life this 35 year old young lady visited the hospital briefly and unhappily. On December 27, 1951, she was married. She attended a wedding party, later she suffered an injury to her right knee as the result of an automobile accident, was brought here immediately and less than 24 hours later was transferred to Hotel Dieu.

We have a brief history obtained from a fully conscious and rational patient at the time of her next admission on November 5, 1956. The house staff commendably recognized the urgency of her condition.

Enlargement Of Neck

Beginning three years before death, and two years after her marriage, the patient noted enlargement of her neck, which proved to be thyroid gland on clinical and autopsy examination. The thyroid weighed 80 grams, with normal weight ranging from 16 to 23 grams. She also noted prominence of her eyeballs three years before admission.

Two years and nine months later, her appetite disappeared, swallowing became difficult, and there was approximately a 20 pound weight loss. We presume that either concern about the jaundice or epigastric pain brought her to the hospital, but not until three months later did anyone become sufficiently concerned for her wildly racing motor to seek medical attention, in contrast to the time of her knee injury immediately following her marriage.

Cause Unknown

Just what started this interesting and dangerous endocrine abnormality we do not know. It is generally accepted that thyrotoxicosis begins as a result of excessive thyroid stimulating hormone which in turn may be frequently triggered by psychic stress. It is

assumed that excessive thyroid stimulating hormone or an abnormal circulating protein thyroxin hormone is present which fails to brake the anterior pituitary thyrotropic hormone.

The evidence for this is equivocal. Pyelonephritis had been present in the past for a sufficient length of time to leave the left kidney atrophied and scarred. We may speculate that this might have had something to do with the beginning of her thyrotoxicosis. There was no evidence of active pyelonephritis at the time of autopsy.

Findings on Admission

On admission, physical findings of exophthalmus, tremor, neck swelling, deep jaundice, and epigastric tenderness were noted. The state of nutrition appeared fairly satisfactory to the clinical and pathological examiners. Estimated height was five feet, and weight 99 pounds, which would be a fairly normal weight. Blood pressure was 130/60, exhibiting a widened pulse pressure as one expects. There was nothing to suggest shock, according to the chart.

Her temperature on admission was 98.4. Whether or not this was a terminal drop in temperature or whether she exhibited no pyrexia we don't know. If it was an accurate temperature and not a terminal event, it may be some evidence against a thyroid storm. The apical systolic rate was 200 and irregular. According to one examiner there was a radial pulse deficit, according to another examiner there was not.

Although auricular fibrillation is the most common arrhythmia in thyrotoxicosis, we do not know that it was present here; it could have been a mixed arrhythmia with atrial fibrillation and multi-focal premature systoles, or there could have been other types of arrhythmia. There was no time for an electrocardiogram. The respiratory rate was 36. We do not know if the respirations appeared labored or increased in depth.

Liver Not Enlarged

The liver was not enlarged clinically; we do not know if vascular nevi were present. There is some liver abnormality in all uncontrolled cases of thyrotoxicosis, if a battery of liver function tests is performed. Klatskin of Yale, writing in Schiff's 1956 edition of "Diseases of the Liver" states that the severity of liver abnormality is in direct proportion to the duration and severity of the uncontrolled thyrotoxicosis.

Central necrosis and fatty degeneration were found in 10 out of 11 fatal thyroid storms in one particular series. Jaundice has been reported, but rarely since 1874 when Habersohn first described jaundice in a fatal thyrotoxic crisis. It was present in one half of one per cent of autopsied patients at Lahey Clinic. I did not encounter any reports of thyroid storms or of uncontrolled hyperthyroidism with jaundice which survived the condition.

No Statements

I did not find any statements as to whether liver abnormalities produced in animals by thyroxin were accompanied by jaundice. Means, in his ancient and unrevised, but excellent textbook on diseases of the thyroid gland, considers liver damage a complication, rather than a true part of this particular disease. Portis believed that glycogen and protein depletion lead to an increased susceptibility to liver damage. Bockus quotes Lichtman's 1942 review with the following points; (1) excess thyroid depletes the liver of glycogen; (2) the liver plays a role in the breakdown of thyroxin, which is not really substantiated.

In the experimental animal, when the diet is made deficient in B complex, and the animal is given large doses of thyroid, there is greater liver dysfunction than there is on a diet which is not deficient in B-complex. Bockus adds the factor of chronic passive congestion in the liver secondary to the effect on the heart with congestive heart failure. Klatskin believes that multiple factors are involved in the production of liver changes. There is no supporting evidence that hepatic dysfunction is responsible for thyroid storm.

Anabolic Hormone

Physiologically, the thyroid hormone is anabolic, and is essential for growth and maturation, but is catabolic in excessive dosage. The circulating thyroid hormone is believed to be thyroxin. The absorption and utilization of glucose, and the break-down of glycogen, are accelerated by thyroid. Oxidation is speeded up, a function which dinitrophenol also has. You may recall that this is the substance which was used some years back to promote weight loss.

It caused many deaths from bone marrow depression, so that its recognized legitimate use fell by the wayside. While oxidation is speeded up, generation of energy-rich phosphate bonds is not correspondingly enhanced, so that there is increased burning of fuel, which is not translated into a correspondingly increased availability of energy.

An increased load is thereby placed on the heart and on the liver, and on other tissues, without availability of increased energy to perform that work. Thyroid and cancer cells are unaffected. While thyroxin has been located in the mitochondria of cells, and while it is known that the concentration of 13 or more enzymes is affected by thyroxin, its exact mode of intracellular metabolic action is unknown.

Fulminating Increase

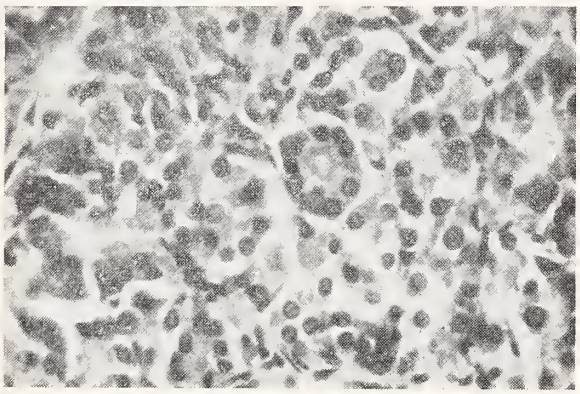
Thyrotoxic crisis or storm demonstrates a fulminating increase in all of the signs and symptoms of thyrotoxicosis. It used to be most commonly seen post-operatively in inadequately prepared patients, and it's rarely, if ever, seen now, post-operatively. Irritability, delirium or coma, pyrexia, vomiting, diarrhea, tachycardia, are usual manifestations.

Adrenal cortical insufficiency may accompany thyroid storm. Experimentally induced thyrotoxicosis increases greatly the body requirements for adrenal cortical hormones. The use of cortico-steroids seems to increase the survival rate in the human in thyrotoxic crisis.

The patient who is being presented tonight was not in hepatic coma at the time of her admission to the hospital. This rules out hypoglycemia or ammonia intoxication or other unknown factors causing death in hepatic insufficiency.

Congestive heart failure was not sufficiently severe to cause death, although microscopically there was evidence of congestive heart failure in the lungs as well as in the liver. There was no evidence of shock, according to the chart.

Tracheal compression sufficient to decrease arterial oxygen saturation or increase carbon dioxide was not noted clinically.



Typical Toxic Goitre

Additional Factor

Certainly an additional factor making for what one would expect to be respiratory embarrasment in this patient was the general effect of thyrotoxicosis on muscle, in this case involving the intercostal muscles and the other muscles of respiration. Esophageal compression may have played a part in this patient in diminishing nutritional intake beyond a critical point, leading to increased hepatic and cardiac disorder.

Diminished potassium stores may have sensitized the heart to a fatal arrhythmia, or conversely, excessive potassium released from cellular break-down, may have caused cardiac arrest. Since death was sudden, my opinion is that death occurred either from asystole, or from ventricular fibrillation. She sought medical assistance possibly a day or two too late for her.

The use of hypertonic glucose, oxygen, digitalis preparation for the purpose of increasing the A-V block in the presence of a rapid auricular fibrillation, the use of adrenal cortical hormones, and intravenous iodide, might have saved this woman's life if it could have been administered 24 to 48 hours earlier.

The PR Indoctrination . . .

(Continued from Page 189)

(n) Medical Public Relations.
(o) Functions of Grievance Committee.
(p) Cause and Prevention of Lawsuits.
(q) Doctors and News Media.
(r) Civic Responsibilities of the Physician.
(s) Coroners, Osteopaths and Chiropractors.
(t) Consent for Operation.
(u) Autopsies.
(v) Sterilization Procedures.
(w) Consultations.
(x) Expert Testimony.
(y) Emergency Medical Call Plans.
(z) Group Disability Insurance.
(zz) Tax Deadlines.
(zzz) Numerous Other Publications.

In some States, to emphasize that the new member is about to join a Society that looks far beyond its nose, literature is handed out describing additional roles of the State Society.

These cover

1. A Medical Defense Fund — Prosecution of Alleged Malpractice
2. A Medical Benevolence Fund — for Indigent Doctors and Families
3. An Education Fund — For Children of Less Fortunate M.D.s.
4. M. D. Placement Service
5. Administrative Guidance to County Societies
6. Program Planning
7. Legal Counsel for Basic Problems in Profession

One can readily see therefore that the P-R Indoctrination Program has very respectable goals and ambitions. It touches doctor-doctor relations, doctor-patient, and doctor-hospital relations as well as those with the Medical Society and Community.

Concluding Statements

Some have said that an efficient, nation-wide P-R Indoctrination Program could forestall socialized medicine. I am not at all sure of that; for it seems to me that if socialized medicine comes, it will do so on the heels of some economic catastrophe entirely beyond our control. But if that day of servitude ever arrives it seems reasonable to believe that if we are fully organized and united at last, we might have a good deal to say about the *terms* of our employment. We should be able to resist all efforts to force on us some completely unfair and unreasonable health plan. If getting organized achieved nothing more than this, it would be worth working for.

Southwestern MEDICINE

VOL. XXXVIII APRIL, 1957 No. 4

EDITORIAL

Medical Education Week

The impressive story of the accomplishments of U. S. medical schools will be told to the nation during the second annual observance of Medical Education Week, April 21-27, and the Southwestern Medical Association has been invited by the national sponsors to develop plans for community programs in this area.

The purpose of the observance is to focus the attention of the American people on the national importance and indispensability of medical education. A well-organized program of public information will bring about greater friendship and support for the medical schools by creating a better understanding of their aims, problems, achievements, and public services.

Eisenhower Endorsement

President Eisenhower, in his personal endorsement of this observance, said, "While the benefits of health and medical education are daily with us, it is fitting to devote a special week to the consideration of the wider training of physicians. Each American has a personal stake in our country's medical schools. The schools which train the physicians required by our growing population are a vital resource for the health of our people and the strength of the Nation."

Specific aims of Medical Education Week, if pursued effectively, will demand the participation of a large portion of our members. These are the goals:

1. To portray the key role that medical education plays in the promotion and maintenance of the nation's health and security, and make the public aware that the nation's 82 medical schools are the foundation of our entire health and medical structure.

High Standards

2. To explain how the medical schools are striving to meet the demand for larger numbers of physicians and, at the same time, to maintain the high standards of training that have come to characterize American medical education.

3. To call attention to the steady progress in the medical sciences, showing what this means in terms of longer life, better health and greater freedom from disease and disability.

4. To point out the wide range of activities — teaching, research, service and leadership — carried on by the modern medical school in addition to its job of training new doctors.

5. To make clear the extent and nature of the new challenges to the profession, some growing out of our constantly expanding fund of medical knowledge and some resulting from the mounting complexity of our civilization.

6. To point out some of the steps being taken constantly to push back the horizons of the medical sciences and to realize the full potential of the nation's health resources.

National Sponsors

While medical societies and medical schools throughout the country build community programs around these objectives, the national sponsors — the AMA and the Woman's Auxiliary, the Association of American Medical Colleges, the Student AMA, the American Medical Education Foundation, and the National Fund for Medical Education — are enlisting the help of newspaper syndicates, radio and television networks, popular and professional publications, civic groups, industry, and commerce in a broad program of national publicity and promotion.

In view of this fertile opportunity to further the goals of medical education, all physicians are urged to demonstrate their gratitude to their alma maters by working actively with their planning groups to help all 82 medical schools win the friendship and support of the public during this Medical Education Week, April 21-27.

CURRENT THERAPY

Treatment of Rheumatic Fever*

By Jack A. Bernard, M.D., F. A. C. P., El Paso

Penicillin should be given at once to eradicate the hemolytic streptococcal carrier state.

Prophylaxis should then be begun and continued indefinitely to prevent further infection with hemolytic streptococci.

If there is no evidence of carditis, salicylate alone probably is preferable to hormone therapy. Recommended dosage is one grain per pound of body weight daily for two days (up to a maximum of 10 grams), then two-thirds grain per pound daily for five days and then one-half grain per pound daily for three weeks. After this, salicylate can be reduced one gram daily, provided the C-reactive protein has disappeared from the blood and does not return, save for a possible transient "rebound" after salicylate has been discontinued.

Smoldering Carditis

If C-reactive protein has not disappeared by the end of four weeks it is highly probable that the patient has smoldering carditis, and cortisone probably is indicated. Giving the salicylate in divided doses of one gram (15 grains) each appropriately spaced through the day is less apt to lead to acute salicylate toxicity than are larger doses given at wider intervals.

In the presence of carditis it has been recommended that cortisone be started *at once* in doses of 300 mg. daily by mouth. This is continued for six weeks, after which the dose is reduced half a tablet (12.5 mg.) daily. Because of the salt-retaining size of the dosage, a rigid diet containing less than 50 mg. of sodium daily is imperative.

Potassium Chloride

To counteract the possibility of potassium depletion, potassium chloride in enteric-coated tablets is given in doses of 1.0 gm. two or three times daily after meals. While six weeks of cortisone usually suffice, further treatment is indicated if the C-reactive protein is still present.

A transient "rebound" when hormone is stopped does not call for further treatment. The C-reactive protein may return at this time but usually disappears in about two weeks. However, if a true relapse occurs or if clinical evidence or if the C-reactive protein or other laboratory evidence of continuing low grade carditis persists, cortisone should be resumed.

*This is the third of a series of articles on Rheumatic Fever by Dr. Bernard.

Dosage Outlined

If salicylate is to be given together with cortisone, the dosage may be outlined as above. However, on theoretic grounds, in the hope of minimizing the rebound phenomenon, it has been advised to continue salicylate dosage at the level of one-half grain per pound of body weight daily for three weeks after cortisone has been stopped.

The cooperative study of the value of cortisone, corticotropin and salicylates in rheumatic fever has raised anew the question whether salicylates may not, after all, exert a beneficial effect on the heart lesions. It has been found in a carefully conducted analysis of a large number of patients that those who receive salicylates fared about as well as those treated with cortisone or corticotropin.

At the same time the evidence that the hormones do exert a beneficial effect when given early in carditis has led to the obvious conjecture that perhaps salicylates too, may be of help.

New Postgraduates Courses at New York University

Two new full-time courses on the management of chronic kidney disease and of hypertension are to be given by the New York University Post-Graduate Medical School from June 24 through 27.

The management of chronic kidney disease (June 24-25), under the direction of Dr. Lawrence G. Wesson, will deal with the selection and interpretation of clinically available tests for the estimation of renal function. The advantages and disadvantages of each test will be considered.

The management of hypertension (June 26-27), under the direction of Dr. J. Marion Bryant, will be concerned with the presentation, with appropriate clinical demonstrations, of the following subjects: a brief summary of etiologic theories, psychological factors, the natural course, relative significance of blood pressure levels, eye grounds, cardiac silhouette, electrocardiogram, renal function, significance of obesity and arteriosclerosis, and unilateral renal disease. Emphasis is placed upon the use of hypotensive drugs. Other therapeutic measures, such as sympathectomy, nephrectomy, and diet-therapy are reviewed.

THE PRESIDENT'S COLUMN

Longer Lives for Doctors

By Celso C. Stapp, M. D., El Paso

Statistically speaking, each and every doctor should live beyond the sixtieth year. That would be assuming that the American doctor is a male individual and many other ifs, ands and buts. Narrowing it down to a professional group, one might ask, is the physician as a professional group committing a special type of genocide?

Recently a very good friend of mine, who is an internist, had a coronary and came precariously close to dying in said initial attack. When one who is older than you has a coronary, you may shrug your shoulders and pass it off as just that he is getting old. As you become older and pass through some of the years in which some of your erstwhile colleagues have had coronaries and have died, the inventory starts.

This is more emphasized when one younger than you has one. The fact that he is on the road to recovery is very little consolation to you. He may have followed the latest theories on how not to have a coronary or may have worked a very carefully planned schedule, primarily based on a theory that it will still prevent physical collapse.

Inventory

An inventory is then made of those who are considered by yourself as the oldsters, and you see that their living may not have been self-planned as those who have gone on. Can we plan ourselves out of falling by the wayside? We know that we cannot choose our ancestors and thus help out in the plan of living to a ripe, "useful," old age. Is it hard work that is killing the profession? The dictum "hard work never killed anyone, but worry has put many a good man in the grave" may hold true in our profession.

We, as doctors, dispense volumes of advice on how to live long and be happy, and I am sure to some extent we try to follow part or all of this direction. We even tell people not to worry, but can we give them the plan and can we follow it ourselves?

Although medical science has done much to eliminate organic disease we have not done so well in helping ourselves and our patients out of the stress diseases which have become a part of our very complicated civilization.

Volumes of Advice

Adding to the volumes of advice may I add a bit that my grandfather once said and which I still feel holds true. "It is not what goes into your stomachs that will kill you but what goes on in your head. Keep a clean conscience and tend to your own knitting. Love your neighbor and help him and he will help you.

"Money is no good when you are dead but God and your friends are as they can go on with you forever!"

Maybe I will be next, maybe you, only time will tell. Statistically we will live a long time. I do not think that we fear death. What most of us fear is being an invalid.

I think that what my grandfather advised holds true in some degree in keeping us out of this plight.

Patient-Doctor Relationship

"The Changing Patient-Doctor Relationship" by Martin G. Vorhaus, M. D. will be published by Horizon Press, New York, on March 18th. This book explores, for the layman what has come to be recognized as a necessary part of medical treatment — the need of both patient and doctor to arrive at a healthier understanding of each other. Clearly written in non-technical terms, it is the result of more than thirty-five years of experience in treating men and women of every age.

The major part of the book is devoted to five long, detailed case histories: two of women and three of men. Presented in a new way, through revealing conversations over long periods of time between patient and doctor, each case becomes an intimate life history. Through it, the reader witnesses, within the privacy of the doctor's office, the treatment of the human being in deepest distress; from secret worry over illness to hesitant and then frank expression, from troubled withdrawal to renewed effort, often from relapse to encouragement skillfully inspired; ultimately from exciting awareness to a positive measure of health.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

1. "Sympathectomy for hypertension shares with laminectomy for prolapsed disc and vagotomy for peptic ulcer the questionable distinction of having been among the most fashionable operations of recent years. Yet, it has lately been said that "few operations" are more dead today. . . . . But the fact that sympathectomy does not cure hypertension does not mean that it cannot help many hypertensive patients." Leading Articles, *The Lancet*, Nov. 17, 1956, Page 1031.

2. "Prostate glands removed at necropsy from patients who have died of some other disease are commonly found to contain histological carcinomas. This remarkable finding was reported by Rich in 1935 and has since been confirmed by very many workers. At least 30 per cent of all men over 50 years old have these lesions. These tumors are indistinguishable histologically from active clinical cancers, yet they have not grown and killed the patient." Special Articles, *The Lancet*, Nov. 17, 1956.

3. "A person who exhibits symptoms of hypoglycemia on one occasion at a level of 30 mg. per cent may on other occasions have a blood sugar as low as 20 mg. per cent and yet be asymptomatic . . . . . It has been suggested that the rate of fall of the blood sugar level is important in determining the type of resulting symptom complex." Milton R. Porter and Virginia K. Frantz, *The American Journal of Medicine*, December 1956, Page 944.

Matter of Record

4. "It is a matter of record in most series, including our own, that whatever the nature of the symptom complex in a given individual with recurrent spontaneous hypoglycemia the attacks tend to follow the same pattern each time." *loc. cit.*, Page 945.

5. "Certain generalizations can be made about this group: the attacks are usually unrelated to fasting, rarely occur before breakfast; they often occur in relationship to periods of emotional stress; and the fasting blood sugar is not consistently low. Further, the condition is not relentlessly progressive as it is in the organic hypoglycemias. In these respects functional hypoglycemia is in direct contrast to hypoglecemia due to a tumor." *loc. cit.*, Page 947.

6. "It is an error to seize upon an obvious adenoma and hustle out of the abdomen. As has been mentioned, 18.6 per cent of these lesions in our series are multiple, and the operation will fail unless all the adenomas are found and removed." *loc. cit.*, Page 957.

7. "If I were to develop a duodenal ulcer resistant to medical treatment, such are my misgivings at present about gastrectomy that I think I would try to persuade my old chief to emerge from his retirement, to perform upon me a simple gastrojejunostomy, and to allow me to take my chance of a stomach ulcer." Eric L. Farquharson, *The Lancet*, Oct. 27, 1956, Page 851.

Overwhelming Evidence

8. "In S. B. E. due to Str. viridans the evidence overwhelmingly incriminates the teeth as the all-important source of infection. So long as teeth or fragments of teeth remain in the jaws a formidable, but preventable, hazard is ever present in the lives of these patients, and we postulate that in all patients who develop S. B. E. due to Str. viridans scrupulous complete dental clearance should be carried out as an essential item of the therapeutic attack upon the disease." F. G. Hobson, *British Medical Journal*, Dec. 29, 1956, Page 1505.

9. "Plasma and serum increase plasma volume, according to their protein content. In calculating the size of the transfusion that a patient needs, the electrolyte content of the transfusion fluid must be ignored. Thus 540 ml. citrated blood contain 430 ml. of blood and 120 ml. of citrate-dextrose solution. If a patient is calculated to have lost 2000 ml. of blood, he needs five, not four bottles of citrated blood to restore his blood volume." *Blood Transfusion in Clinical Medicine*, P. L. Mollison, Oxford, Page 63.

10. "Studies in adults have shown that after the loss of 500 ml. of blood it takes 50 days for the haemoglobin to reach its original level. After the loss of 200 ml. of blood, the average time was distinctly shorter (23 days in seven cases)." *loc. cit.*, Page 65.

(To be continued)

Free Cardiac Surgery Program

National Jewish Hospital at Denver is expanding its cardio-vascular program. It will consider applications for admission in behalf of patients suffering from cardio-vascular defects amenable to surgical intervention, including mitral and aortic stenosis, congenital cardiac anomalies, etc. Definite diagnosis is not necessary prior to admission, inasmuch as the hospital has a completely equipped cardio-pulmonary physiology laboratory for this purpose.

Patients are accepted without respect to race, religion, or national origin, and without charge. Only those unable to pay for private care are eligible. Periodic reports are made routinely to the referring physician and the patient is directed to report to him after discharge.

"POINTERS"

From the Case Records of the Massachusetts General Hospital,* 1953

(Continued)

13. "Silent mitral stenosis is rare; only three cases had been seen at the Mass. Gen. Hosp. up to 1953;" A Composite; *loc. cit.;* p. 781.

14. ". . . it is possible to remove one lung by pneumonectony so that only half the pulmonary vascular bed remains without creating pulmonary hypertension." *loc. cit.;* p. 866.

15. "Regional enteritis traditionally has four stages — a stage in which it simulates acute appendicitis, a chronic-diarrhea stage, an obstructive stage and a fistulous state." *loc. cit.;* p. 907.

16. ". . . focal convulsions in hepatic failure should always lead to the strong suspicion that there is a focal cerebral lesion in addition to any alteration of brain function associated with the cholemic state." *loc. cit.;* p. 987.

Poor Procedure

17. "Under any conditions a splenectomy is a poor therapeutic procedure for the treatment of bleeding esophageal varices, because . . . it may preclude a satisfactory portacaval shunt. Unfortunately, many surgeons are still performing splenectomies for bleeding esophageal varices." *loc. cit.;* p. 1027.

18. "When patients have resting pain with arterial insufficiency, it is an ominous sign indeed." *loc. cit.;* p. 1029.

19. "One of the important reasons for continued periodic follow-up study of diabetic patients is to provide early diagnosis and prompt, vigorous treatment of asymptomatic urinary-tract infection, which is frequent in diabetes. Pyuria in a diabetic patient should never be ignored. Catheterization should be avoided whenever possible or performed only under the most rigidly aseptic technic. In cases of obscure fever in diabetic persons the urinary tract should be thoroughly studied." *loc. cit.;* p. 1069.

20. ". . . benign gastric ulcer is a rare disease in women." *loc. cit.;* p. 76.

Clinical Judgment

21. ". . . one of the best tests of clinical judgment is to have to decide which of many symptoms and signs are relevant to the main clinical problem and which ones may be disregarded." *loc. cit.;* p. 157.

22. "Coffee-grounds vomitus is a frequent agonal symptom with all serious neurologic diseases that produce coma and will probably be explained by erosions of gastric mucosa rather than frank ulceration." *loc. cit.;* p. 159.

23. "(Arteriovenous aneurysm in the lung) . . . is one of the few radiographic appearances that is pathognomonic, and the diagnosis may be made unequivocally." *loc. cit.;* p. 162.

24. "In the presence of polycythemia a complicating tumor is not uncommon. In one reported series of patients with polycythemia the incidence of cancer was extremely high — 10 to 15 per cent." *loc. cit.;* p. 205.

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. — Andrew M. Babey, M. D.

European, Bermuda Tours Are Scheduled by A. M. A.

Post-Session tours to Europe and Bermuda are being offered A. M. A. members following the Association's Annual Session in New York, June 3-7.

Two European tours are offered — one of 24 days to France, Italy, Switzerland and Belgium, and one of 38 days, which is a longer holiday, visiting England, Belgium, Holland, Germany, Switzerland, Austria, Italy and France.

In cooperation with the World Medical Association, special scientific sessions of exceptional interest have been planned in London, Paris and Geneva.

In addittion to Europe, the post-session program includes three trips to Bermuda, designed for those who may not have sufficient time for a European vacation. One trip is five days long — the other eight days, with an opportunity to make the round trip by air, or go one way by air and one way by steamer.

Chest Physicians to Meet in New York

The 23rd Annual Meeting of the American College of Chest Physicians will be held at the Hotel Commodore, New York City, May 29 through June 2. The scientific program will include prominent speakers on all aspects of heart and lung diseases. In addition to formal presentations, there will be a number of symposia, round table luncheon discussions, seminars, and motion pictures.

The fireside conferences, which were inaugurated at the annual meeting of the College in 1955, have become more and more popular and will be repeated. At this session, more than 50 experts will be present to lead the discussions on many subjects of current interest in the specialty of diseases of the chest.

Examinations for Fellowship in the College will be held on Thursday, May 30. On Saturday evening, June 1, more than 150 physicians will receive their certificates of Fellowship at the annual Convocation, which will precede the President's Banquet.

MEETINGS

Texas Orthopaedic Association to Meet in Dallas, April 29

Plans for the annual meeting of the Texas Orthopaedic Association in Dallas, April 29, 1957, in connection with the annual meeting of the Texas Medical Association, have been announced by Dr. John J. Hinchey of San Antonio, President.

The morning program will be held in the roof garden of the Adolphus Hotel, with luncheon in the roof garden, and the afternoon program in Southwestern Medical School. Speakers and their subjects are as follows:

Dr. Charles F. Gregory of Dallas, Chairman and Associate Professor of the Division of Orthopaedic Surgery in the University of Texas Southwestern Medical School, "Poliomyelitis in Dallas, 1956, and its Relation to the Salk Vaccine."

Dr. H. R. McCarroll of St. Louis, Assistant Professor of Clinical Orthopaedic Surgery in the Washington University School of Medicine, "Management of Congenital Dysplasia and Congenital Dislocation of the Hip in Infancy."

Dr. T. O. Shindler of Houston, "Tissue Culture Compression Studies on Bone Cells."

Dr. Preston A. Wade of New York City, Professor of Clinical Surgery at Cornell University Medical College, "Importance of Joint Motion in the Treatment of Fractures."

Dr. H. H. Brindley of Temple, Texas, Scott and White Clinic, "Chamley Type Arthroplasty of the Hip."

President's Address by **Dr. John J. Hinchey of San Antonio.**

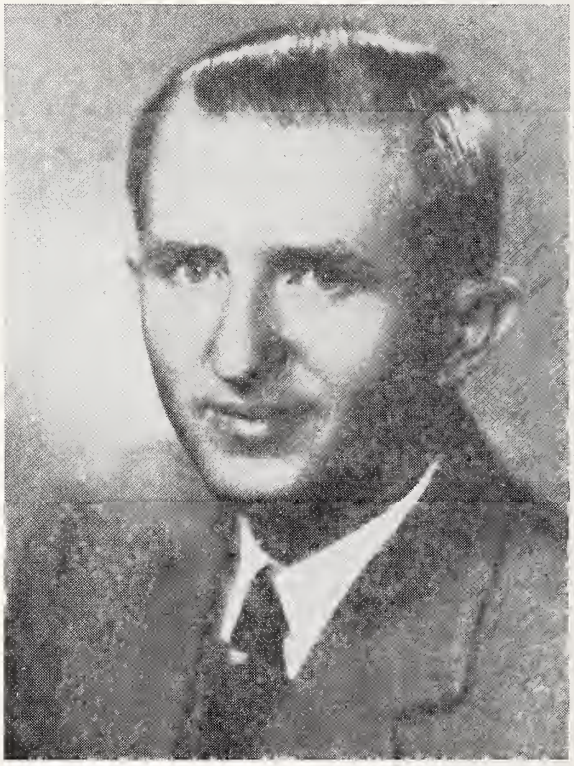
Dr. D. C. Hucherson of Houston, Clinical Associate Professor of Orthopaedic Surgery at Baylor University College of Medicine, "Arthrodesis of the Shoulder — A New Method."

Panel: "Diagnostic and Therapeutic Orthopaedic Problems" with Dr. C. F. Gregory as Moderator and Panelists Dr. H. R. McCarroll, Dr. Louis W. Breck, El Paso, Dr. Henry C. McDonald, Fort Worth, and Dr. Duncan McKeever, Houston.

Born in Battle Creek

Born in Battle Creek, Michigan, Dr. Gregory received his M. D. from Indiana University School of Medicine, and took postgraduate training in Orthopaedic Surgery in the Indiana University Medical Center, from 1948 to 1951. He was Instructor in Orthopaedic Surgery at the Indiana University School of Medicine from 1951 to 1954. He served in the U. S. Navy Medical Corps during World War II and the Korean War.

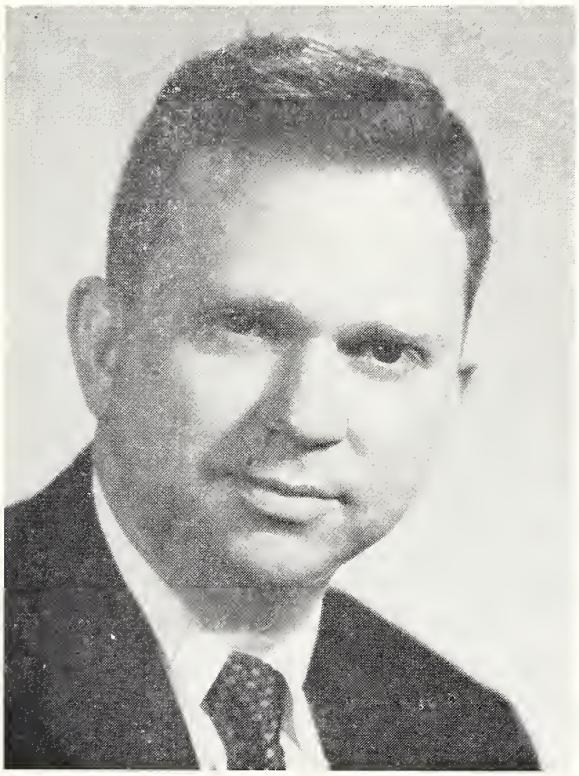
Dr. McCarroll was born in Walnut Ridge, Arkansas, and received his M. D. degree from the Washington University School of Medicine. He took his Internship and was Assistant Resident in Surgery in Barnes Hospital in St. Louis, Missouri from 1931 to 1932; he was Assistant Resident in Billings Hospital, Chicago, 1933 to 1934; and Resident in the Shriner's Hospital for Crippled Children, in St. Louis, Missouri from 1934 to 1937. He is on the staff of the Barnes Hospital, the St. Louis Children's Hospital, St. Luke's Hospital, and the Shriner's Hospital for Crippled Children in St. Louis.



Dr. H. R. McCarroll

Interned in Philadelphia

Dr. Shindler was born in Hempstead, Texas, and received his M. D. from the University of Texas Medical Branch in Galveston, Texas. He took his Internship in the Episcopal Hospital in Philadelphia, and received his Orthopaedic training in the Hermann

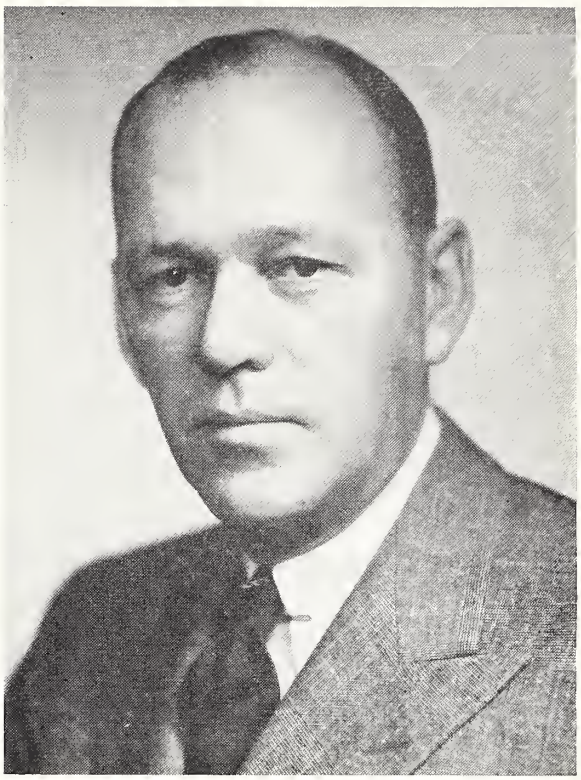


Dr. T. O. Shindler

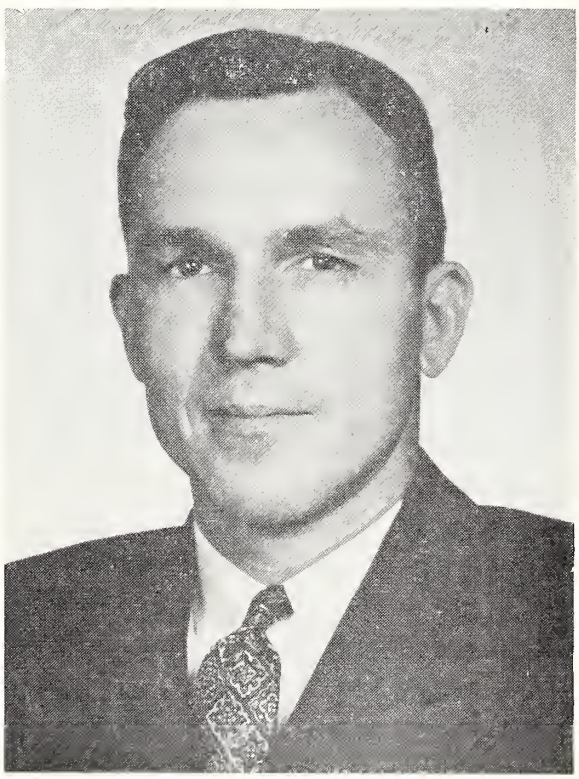
Hospital (Shrine Service) in Houston and the University of Texas Medical Branch. He served in the Army Medical Corps from July, 1944, to September, 1946. In 1951, he entered private practice in Houston. He has done research in the field of compression studies and has published an article on "The Influence of the Contact Compression Factor on Osteogenesis in Surgical Fractures."

Dr. Wade was born in Helena, Montana, and received his M. D. from Cornell University. He is Attending Surgeon in New York Hospital; Chief of Combined Fracture Service in New York Hospital — Hospital for Special Surgery; and Chairman of the Committee on Trauma of the American College of Surgeons.

Born in Temple, Texas, Dr. Brindley received his M. D. from Washington University School of Medicine, in St. Louis, Missouri, and took his Internship in the Charity Hospital of Louisiana in New Orleans from 1942 to 1943. He took his Residencies in Scott and White Hospital in Temple in General Sur-



Dr. Preston A. Wade



Dr. H. H. Brindley

gery, and W. C. Campbell Clinic in Memphis, Tennessee, in Orthopaedics. He has taken postgraduate courses at the University of Texas Medical School at Galveston and the University of Tennessee. His present hospital appointment is with Scott and White Memorial Hospital in Temple, in Orthopaedic Surgery.

Graduated From Baylor

Dr. Hinchey was graduated from the Baylor University School of Medicine and took a Fellowship in Orthopaedics at the Mayo Clinic in Rochester, Minnesota. He received his M. S. in Orthopaedic Surgery in 1946 from the University of Minnesota. He is Associate Professor in Orthopaedic Surgery in the University of Texas Graduate School of Medicine in San Antonio, Assistant Professor in Orthopaedic Surgery at the Baylor Graduate School of Medicine and is a consultant at Brooke General Hospital in San Antonio.

Dr. John J. Hinchey

Dr. Hucherson was born in Houston, Texas, took his Internship in Parkland Hospital, Dallas, and his Residency in the University of Louisville Hospitals.

Other officers of the Texas Orthopaedic Association are Dr. Lawrence Griffin of Austin, Vice-President; and Dr. Margaret Watkins, Dallas, Secretary-Treasurer. Dr. B. C. Halley, Jr., of Dallas is Program Chairman for the meeting.

Old Organization

One of the oldest orthopaedic organizations west

Dr. D. C. Hucherson

of the Mississippi River, the Texas Orthopaedic Association had its beginnings thirty years ago and was re-organized as a former organization with a new constitution and by-laws in 1934. Membership in the Texas Orthopaedic Association is limited to men who have passed both sections of the American Board of Orthopaedic Surgery. At present there are 133 members of the Texas Orthopaedic Association in good standing.

The organization meets each year in conjunction with the Texas Medical Association and is devoted to the advancement of Orthopaedic Surgery in the State of Texas. It meets for one day and has a program consisting of formal papers and case presentations.

COMMON COLD

Antihistaminine Chemicals In The Treatment Of The Common Cold: Report on a Twenty-Seven Month Study

Baughn, W. L., Indust. Mea. & Surg. 19:413, 1950

This report concerns use of antihistaminics in treatment of colds occurring in a large group of industrial workers. It is concluded that these agents provide excellent symptomatic relief.

[The majority of recent reports are far less enthusiastic than the above concerning the value of antihistaminics in treatment of the common cold. Ed.]

Clinical Clippings, December, 1950.

Southwestern New Mexico Medical Society to Meet April 10

The regular meeting of the Southwestern New Mexico Medical Society will be held in Deming, N. M., at 6:30 p. m. April 10 with the Luna-Hidalgo County Medical Society as the host group.

Dr. James D. Bozzell of El Paso will be the principal speaker. He will discuss urological problems in general practice.

Clinical Hypoxia Courses Scheduled in New York

Monthly intensive courses in clinical hypoxia will be held April 5 and 6, May 3 and 4, and June 7 and 8 at the offices of the National Resuscitation Society, 2 East 63rd Street, New York.

These courses have been presented in cooperation with the American Medical Association in New York City and in southern, mid-western and western cities.

More than 1,000 physicians and dentists have received personal instruction in exposing the death zone of the respiratory tract.

Postgraduate Gastroenterology Course Scheduled in Colorado

A three-day postgraduate course on gastroenterology will be presented at the University of Colorado School of Medicine in Denver, May 13-15. The course will offer a broad and intensive review of present day concepts and pertinent recent developments in this field. The faculty will include twenty-eight nationally-known guest physicians who were selected for their authoritative knowledge of their respective subjects.

This exceptional faculty is made possible by the co-sponsorship of the American Gastroenterological Association. The annual meeting of this association will be held at the Broadmoor Hotel in Colorado Springs immediately following the course.

"The Peptic Ulcer Problem" will be the subject of a panel discussion on Tuesday evening at Phipps Auditorium in City Park with six outstanding guest speakers participating. This meeting will be open to all physicians.

In conjunction with the course, the Colorado Society of Internal Medicine will sponsor a dinner meeting at the Albany Hotel on Monday evening. The guest of honor and speaker will be Dr. Hermon Taylor of London, whose subject will be "The Present Status of Medicine in England."

Pan-American Cancer Cytology Congress Scheduled in Miami Beach

The first annual Pan-American Cancer Cytology Congress will hold its sessions April 25-29 in the Eden Roc Hotel in Miami Beach.

Coming Meetings

Southwestern New Mexico Medical Society, April 10, Deming, N. M.

Clinical Hypoxia Courses, April 5 & 6, May 3 & 4, and June 7 & 8, National Resusciation Society, New York.

Border Public Health Association, Apr. 9-12, Hilton Hotel, San Antonio.

Cardiology Review Courses, New York University Postgraduate Medical School, Apr 11 - May 23, and May 6 - 24.

Pan-American Cancer Cytology Congress, April 25-29, Eden Roc Hotel, Miami Beach.

Texas Medical Association, 90th Annual Session, April 27 - May 1, 1957, Dallas. Headquarters, Baker and Adolphus Hotels. Headquarters, Woman's Auxiliary, Statler Hilton Hotel.

Texas Orthopaedic Association, Annual Meeting, April 29, Adolphus Hotel, Dallas.

American Trudeau Society, May 6-9, Kansas City.

Postgraduate Course, Gastroenterology, University of Colorado School of Medicine, Denver, May 13-15.

American Gastroenterological Association Annual Meeting, Broadmoor Hotel, Colorado Springs, May 16.

New Mexico Medical Society, May 15, 16, 17, 1957, in La Fonda Hotel, Santa Fe.

District 8, American College of Obstetrics and Gynecology, Reno, Nevada, May 27 & 28.

American College of Chest Physicians, Annual Meeting, May 29 - June 2, Hotel Commodore, New York.

Postgraduate Course, Management of Chronic Kidney Disease, New York University Postgraduate Medical School, June 24-25.

Postgraduate Course, Management of Hypertension, New York University Postgraduate Medical School, June 26-27.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, 1957, in El Paso.

Texas Surgical Society, El Paso, April 7 & 8, 1958

ORIGINAL ARTICLES

Prevention and Treatment of Blood Transfusion Reactions

(Continued)*

MARVIN J. FRIEDENBERG, M. D.**
Former Interne, New England Center Hospital, Boston

Pyrogenic Reactions

One might be tempted to include the so-called "pyrogens" among those phenomena which alter the physical properties of the blood, since it appears reasonable to assume they are nothing more than physical agents of molecular size. The infamous pyrogens are probably the most common agents responsible for transfusion reactions.

Yet, paradoxically, the discovery of the exact nature of these agents remains one of the most obscure problems in delineating the etiological factors responsible for transfusion reactions. The name "pyrogen," implying "fever-producing," only adds to the confusion, since most reactions produced by other factors are also characterized by fever. One of the first clear demonstrations of the pyrogenic reaction was made in 1923.[48]

A diagnosis of a febrile or pyrogenic reaction is usually made when the following two criteria are met: (1) a brief (less than four hours) episode of fever and chills of varying degrees of severity developing during or shortly after the completion of a blood transfusion and (2) occurring without serious sequelae and in the absence of evidence of hemolysis, infection, or reaction attributable to other cause.[1,10] This definition, in a sense, makes the term "pyrogenic reaction" a waste-basket for mild types of transfusion reactions.

No Greater Reaction

There is apparently no greater incidence of pyrogenic reactions following the administration of properly preserved blood than of fresh blood.[8] The pyrogenic reaction is reported[1] to be the most common type of blood transfusion reaction, having occurred with an incidence of 2.9 per cent in one study of over 2400 transfusions.[8] It is frequently characterized by mild chills in the absence of fever and change in blood pressure, all symptoms disappearing within 24 hours and death rarely occurring.[1]

Although it is considered to be one of the least serious types of blood transfusion reaction, such a reaction in a debilitated patient may not be harmless.[49] Violent chills, a fever rise of as high as 4°F accompanied by flushing of the skin, nausea, vomiting, and prostration may develop.[1]

The severity of a pyrogenic reaction is proportional to the amount of pyrogenic infused,[1,50] the speed of the infusion, and the susceptibility of the host. It has been noted[8] that the reaction rarely occurs when the recipient of the transfusion is under general anesthesia.

Many Theories

Many theories have been postulated concerning the etiological factors involved, any one or all of which may actually be operative. One of the most popular concepts is that the so-called "pyrogens" responsible for the reaction are chemical substances, breakdown products of bacterial metabolism or altered protein present within the equipment used for blood transfusion.[51,52]

A possibility is that the offending agents are particles of old blood present in improperly cleaned equipment or even foreign protein originating from dead bacteria killed by sterilization.[10]

Still other theories implicate either the recipient of the transfusion, postulating a peculiar hypersensitivity or idiosyncrasy present in the individual, or the particular disease afflicting the recipient, some claims having been made that pyrogenic reactions are almost invariably associated with the infusion of blood into patients having certain diseases.[10] It is claimed[1] that a febrile disease, liver disease, or hypeproteinemia increases patient susceptibility.

Slight Distinction

From the above discussion it seems apparent that the distinction between so-called pyrogenic reactions and anaphylactoid or allergic reactions may be slight indeed. It is not difficult to imagine that all of these reactions are merely gradients of response to the same type of stimulus and actually represent one large family of physical reactions occurring via similar mechanisms.

The pyrogenic reaction may easily be confused with a mild hemolytic or allergic reaction, and, as suggested above, it is quite conceivable that it actually may be a form of the latter. Since it is impossible to differentiate clinically a pyrogenic from an early hemolytic reaction, it is recommended[1] that any trans-

*This is the second of three sections of this article, the third to be presented in a subsequent issue.

**At present Resident in Medicine, Grace-New Haven Hospital, New Haven, Conn.

fusion complicated by the development of the characteristic clinical manifestations of such a reaction be stopped immediately.

The distinction may then be established by appropriate laboratory studies, a positive test for free hemoglobin and bilirubin in the blood indicating the presence of a hemolytic type of reaction.[1] In addition, since it takes 30-45 minutes for a pyrogenic reaction to occur following the initiation of the blood transfusion, it is recommended[10] that a 30-60 minute interval be allowed to elapse before beginning the second of two units of blood which one might intend to infuse simultaneously. In this way the offending unit of blood may be more readily detected, and only one of the two bottles need be discarded, if a reaction develops.

Other Measures

Other general prophylactic measures which may be taken[10] include meticulous care in the cleansing and sterilization of equipment and attention to the purity and quality of blood preservatives. Even more desirable is the utilization of disposable equipment and the reporting of suspicious sets to the manufacturer.

Greater consideration should be given to patients with diseases which predispose toward a hypersensitivity to pyrogens.[10] The most specific prophylactic procedure which may be undertaken is the administration of antipyretics to the patient. Salicylates have been recommended as the best agents to use, one gram of acetylsalicylic acid being given per hour for two hours prior to the intended transfusion and again at the time of the transfusion. This procedure is reported[10] to result in fewer, less severe, or delayed reactions.

Note that the administration of antihistaminics is *not* recommended by some,[10,53] although others[1,54] find it strikingly effective in reducing the incidence of this type of reaction. Clarification of this discrepancy in experimental findings upon which these opinions are based is urgently needed. Once a pyrogenic reaction develops it may be treated symptomatically with aspirin for fever, blankets and hot water bottles for chills, and sedatives if necessary.[1]

Allergic Reactions

The allergic or anaphylactoid type of transfusion reaction is characterized by the development of one or more of the familiar sensitivity responses the sensitized body may be stimulated to make by the introduction of an allergen — namely, a skin rash, pruritus, hives, urticaria or angioneurotic edema (generalized or localized), asthma, serum sickness, and possibly the severe anaphylactoid type of shock.

The latter may be similar to the typical reaction produced by the introduction of horse serum into an individual sensitive to it; that is, loss of sphincter control, asthmatic wheezing and rales, laryngeal edema, and even death.[1,10,32,55,56,57] These allergic states may become manifest during or shortly after the completion of the blood transfusion[10,57] and vary from extremely mild to quite severe reactions.[56]

The incidence of allergic blood transfusion reactions is reported[1] to be second only to that of pyrogenic reactions among untoward responses attributable to blood transfusion, the incidence varying from .5-10 per cent in different reports.[1,10] One group[10] found that only three severe allergic reactions developed in 75,000 transfusions but observed mild reactions with each transfusion in recipients having a wide range of allergies, the over-all incidence being .5 per cent.

It was suggested by these authors that sensitivity to a particular blood fraction may develop in patients receiving numerous transfusions, thus accounting for those recipients who inevitably have reactions with every transfusion. Another observer[32] who estimated that allergic reactions occurred in less than one per cent of all transfusions stated that those patients with allergies to substances in the environment are more likely to develop allergic transfusion reactions.

Allergic types of reaction are reported to have developed in one per cent of 10,000 plasma transfusions[58] and in five out of 400 blood transfusions observed by another group.[59] Still others[8,60] have estimated the incidence of pyrogenic and urticarial reactions to be between 1.8 and 2.7 per cent.

Several Causes

The allergic transfusion reaction may be caused by one or more of the following mechanisms: (1) A specific allergen or foreign protein in the donor's blood may be transferred into a recipient who has a corresponding hypersensitivity to the particular substance.[1,10,61] (2) A specific hypersensitivity or allergy to particular allergens may be passively transferred from an allergic donor to a previously nonallergic recipient.[1,62]

The allergic state thus created in the recipient by the antibodies of the sensitized donor is a temporary one[10] but may last as long as several weeks.[50] The situation is complicated by the fact that some donors are unaware of the existence of their own allergies.[10] (3) Another possibility is that the recipient may be allergic to a specific blood fraction native to the donor's blood but foreign to his.[10,63] In this respect it has been suggested[64] that the allergic reaction may be the result of sensitization of the recipient to blood of a particular donor.

Common Denominator

At present the common denominator of all of these reactions is considered to be an antigen-antibody reaction which results in the liberation of an "allergotoxin" (postulated to be at least in part histamine) which produces the allergic symptoms.[65,67]

Histamine is found in normal living body cells, but an increase in the amount of this substance is known to be associated with allergic states.[1,65] Experiments[6] have been reported which may be taken to substantiate this theory.

Although it is possible for an allergic transfusion reaction to be the result of the transfer of a recently ingested food allergen from the donor into the circulation of a specifically sensitized recipient,[60] this type of reaction is reported to be extremely rare, leading one group to discontinue the routine of instructing prospective donors to fast for four hours prior to giving blood.[10]

The Red Cross does not require the donor to be in a fasting state prior to phlebotomy and actually advises the ingestion of a low protein, low fat, light meal preceding the donation.[1] It might be noted parenthetically here that infusion of blood with an elevated alcohol content, as a consequence of the previous ingestion of alcoholic beverages by an inebriated donor, apparently produces no measurable adverse effects in the recipient.[10]

Blocking Agents

The prevention and treatment of allergic transfusion reactions essentially involves the utilization of antihistaminics as blocking agents[58] and the administration of sympathomimetic drugs in the form of prophylactic and symptomatic therapy. An extremely effective prophylactic procedure is the infusion of washed and resuspended red cells, thus eliminating the transfusion of plasma which is the vehicle carrying the allergens.[10,57] If it is deemed necessary or advisable, the donor may be instructed to fast several hours prior to phlebotomy, or he may be denied food that is on the allergic recipient's restricted food list.[57,68]

Considerable difference of opinion has been expressed concerning the relative value of prophylactic antihistaminics in the prevention of allergic transfusion reactions. Some observers[10] consider the incidence of allergic reactions to be too low to warrant the routine use of prophylactic antihistaminics. However, they advise administration of these agents one hour prior to transfusion in those patients who previously have had allergic transfusion reactions.

Epinephrine Hydrochloride

It has also been found that, if considered advisable, .3 ml of a 1:1000[1] or .50-1.0 cc of a 1:2600[68] solution of epinephrine hydrochloride is quite effective in preventing allergic reactions when added prophylactically to blood. It might be added parenthetically here that the addition of p-aminobenzoic acid systemically to blood is claimed[69] to decrease the number or attenuate the severity of "reactions" of various kinds.

The therapeutic use of antihistaminics following the development of an allergic transfusion reaction is more or less universally accepted[1,10] and the response to this therapy is reported to be excellent.[1]

In addition the administration of adrenalin may definitely be indicated when the more severe allergic reaction occurs. Quick response has been noted[1] following the use of .3 ml of 1:1000 epinephrine hydrochloride, and others[10] reported prompt relief subsequent to adrenalin therapy of all three of the most severe reactions they observed. They also felt that the administration of small doses of intravenous adrenalin is occasionally indicated therapeutically, and this medication should especially be available when the proposed recipient has a history of previous transfusion reactions.

Infectious Disease Agents

Infectious disease agents which may be responsible for blood transfusion reactions include bacteria, viruses, spirochetes, and protozoa.

Bacteria. There are several portals of entry by which offending bacteria may gain access to transfused blood. The most obvious way is for them to be present in the blood stream of the donor.[72] A less obvious but nevertheless omnipresent portal of entry is the deeper layers of the donor's skin which must be pierced during the blood collection phlebotomy. In spite of apparently adequate precautions, including an "aseptic" technique of venipuncture, it is inevitable that bacteria will be introduced into the transfused blood at least occasionally in this manner.[71]

Another unusual portal of entry may be an imperfectly sealed bottle cap or other leaks in the collection or infusion equipment.[72] Probably the most common avenues of contamination, however, are unsterile bottles or transfusion equipment allowed to remain septic by improperly functioning autoclaves.[72] Proof of the existence of this avenue has been further susbstantiated by the actual culture of organisms from washed bottles and tubing prior to their being autoclaved.[73]

Common Contaminators

The most common contaminators of blood designed for transfusion are reported[70] to be small numbers of nonpathogenic diphtheroids, staphylococci, and other Gram-postive organisms, all of which undoubtedly utilize skin or air as portals of entry. Although banked blood is frequently contaminated, most organisms contaminating the stored blood are Gram-postive, few in number, and responsible for the production of minimal reactions.

Most fatal transfusion reactions caused by bacterial contamination, however, are due to relatively nonpathogenic Gram-negative bacilli.[71] The organisms most frequently implicated on smear and culture of offending blood are the non-spore forming enteric rods of the paracolon, coliform, and pseudomonas group.[70-72,74]

Some of the bacteria which have been found responsible for many severe blood transfusion reactions are *Escherichia coli, Pseudomonas aeruginosa, Aerobacter aerogenes, Paracolobactrum aerogenoides,* and

Achromobacter sp.[70,72,73,75] The first two organisms named are responsible for some of the severest reactions occurring in man.[72] The offending coliform organisms, although frequently found in feces, surface water, and soil, may also be found on human skin.[72]

The brucellosis organism, reported[10] to be unaffected by refrigeration, has also been implicated as a blood transfusion contaminant.[8] The toxicity of the infused blood contaminated by these bacteria is not necessarily the result of their inherent pathogenicity *per se,* but rather is a consequence of two characteristics which make them potentially quite harmful.

Capacity To Reproduce

The first is their capacity to reproduce at low temperatures, which enables them to multiply while being stored in the refrigerator, thus making possible the inoculation of large numbers of bacteria in blood which had originally been contaminated by relatively few.[71]

The fact that almost all fatal reactions have occurred following the infusion of blood that has been stored for at least two weeks[76] is consistent with the idea that the offending bacteria multiply while the blood is in storage. This also indicates that there probably is a time lag before the bacteria begin to multiply in dangerously large numbers.[74,76] It is also stated that some of these bacteria are capable of utilizing citrate and actually thrive on citrated stored blood.[72,77]

Second Characteristic

The second characteristic is the phenomenon of the release of endotoxins from these bacteria subsequent to their inoculation.[71] It is stated[72] that they seldom cause actual septicemia. In a group of animal experiments recently reported,[74] it was found that specific antibacterial sera or antibiotics protected mice against the toxicity of blood contaminated with a sufficient number of ordinarily lethal *living* bacteria.

Significantly enough, however, neither of these agents was effective in protecting the animals against the crude endotoxins of the offending bacteria. In addition, only a slightly smaller number of viable than heat-killed bacteria (or their equivalent in endotoxin) was capable of causing death in the mice.

It was inferred, therefore, that the immediate pathogenetic agents were bacterial endotoxins and that if a slightly subcritical or sublethal number of bacteria were inoculated, they could multiply *in vivo* (in the absence of the protective influence of antibiotics or antibacterial sera) to the extent that sufficient endotoxin would then be present to make the inoculation lethal.

The acute reactions and sudden deaths that resulted were attributable more to an "intoxication" by bacterial endotoxins than to an infection, and the efficacy of antibiotics or antibacterial sera in protecting the animals was believed to be a result of their ability to keep the number of offending organisms below the critical level of endotoxin production.

Bacterial Pyrogens

Bacterial pyrogens have been prepared from some of the previously mentioned organisms which have been found pathogenic in blood transfusion reactions, and these pyrogens have been found to produce shock and sudden death in rabbits, at times in the absence of bacteremia and positive blood cultures.[72] These agents, prepared by methods described elsewhere,[78,79] cannot be removed by ordinary bacterial filters and cannot be inactivated by autoclaving.[72]

A reasonable explanation for the less severe reactions produced by pure bacterial pyrogens in comparison to those resulting from inoculation of whole, viable bacteria has already been given. Nevertheless, the injection of purified pyrogens alone is capable of producing severe shock in humans.[80,81]

Transfusion Reactions

The blood transfusion reaction produced by the infusion of blood contaminated with bacteria which are seriously pathogenic in this respect is characterized[10,32,71,72] by the early development of a full feeling in the head, headache, and restlessness. This is usually followed within 10-30 minutes by severe shaking chills and considerable fever.

One hour later, a red flush, resulting from peripheral vasodilatation, may develop and may best be observed in the conjunctivae. By this time nausea, vomiting, diarrhea, and abdominal distress may have ensued. The cardinal feature of a contaminated blood transfusion reaction then supervenes — namely, peripheral vascular collapse.

This is characterized by hypotension, tachycardia, tachypnea, cyanosis, anuria, and uremia. This state of shock may be complicated by a severe septicemia, although the infused bacteria may disappear rapidly from the blood stream and sterile blood cultures may be obtained.

Death usually results via this peripheral vascular collapse, sometimes called "red shock" because of the associated orthostatic hypotension, loss of vasomotor control, and warm, hyperemic skin. It has been noted, however, that although the extremities may be warm initially, they eventually become cold and clammy. Backache and leg pain may also be part of the syndrome.

Death may occur in one to 60 hours, or the patient may recover by lysis over a period of many days. The infusion of as little as 25-40 cc of contaminated blood may result in the recipient's demise.

Endotoxins

The production of transfusion reactions by the endotoxins present in most Gram-negative bacilli is believed to occur as a result of their toxic effect on the peripheral vasculature of the blood recipient.[82-85] These bacterial pyrogens or toxic metabolic products are extremely injurious to blood vessel (including capillary) walls, the primary disturbance in circulation resulting from their action being called bacteremic shock. The latter, incidentally, is characterized by decreased cardiac output and a slightly decreased plasma volume, in addition to hypotension.

Diagnosis. There are three cardinal features of the contaminated blood transfusion reaction that are characteristic enough to constitute guide posts in the differential diagnoses.

The first is the typical reaction, characterized by peripheral vascular collapse, observed clinically in the recipient of such blood.[72]

The second is the demonstration by smear and culture at both room and storage temperatures of the offending bacterial organisms. Since a contaminated blood transfusion reaction may result from the presence of either viable or killed bacteria, it is essential that both smear and culture be performed in an effort to demonstrate the offending organism.[10] It is advised[10] that the recipient's blood as well as donor bottle be studied in this respect. With this in mind, it is recommended[24] that the empty transfusion bottle be kept closed in the laboratory for 24 hours after the infusion is completed, since premature disposal of it would prevent proper investigation of a reaction which had occurred.

Third Feature

The third feature is the demonstration of the presence or absence of hemolysis in the recipient's blood by a determination of the plasma hemoglobin concentration.[86,87] It might be noted parenthetically at this point that the observation of clotted blood in the stored bottle may be a valuable clue indicating the presence of bacterial growth. Many strains of Gram-negative bacteria, especially *Aerobacter aerogenes*, consume citrate, with the result that the blood coagulates.[77]

Prophylaxis. One of the most effective prophylactic measures which must be routinely undertaken is adequate cold storage of the collected blood.[1,70,72] It is recommended[71] that the period of storage be limited to 14 days or less (although the National Institutes of Health permit 21 days of storage).

A second prophylactic procedure is the utilization of strict aseptic technique in the collection, preservation and storage, and administration of blood. As has been suggested, this might be expected to be particularly effective against minor contamination, although gross bacterial contamination can, of course, occur in spite of the most conscientious efforts in this respect.

Proper phlebotomy technique includes as careful sterilization of the donor's skin and collector's hands as is possible.[10] The utilization of disposable collection and administration units cannot be recommended too highly.[72]

If they are not being used, adequate sterilization of all equipment is essential.[10] Reports vary as to the relative safety of the gravity and vacuum types of blood collection sets,[70] some claiming they are equally culpable and others[10] stating that the former is theoretically not as safe from bacterial contamination as the latter.

However, it was warned[10] that unless suitable precautions were taken, the vacuum set would more readily allow bacterial contamination as a consequence of the increased pressure gradient between the internal and external surfaces of the diaphragm lid.

Third Measure

A third prophylactic measure which may be undertaken against contaminated blood transfusion reactions is the prevention of the entrance of air into the transfusion system. Contamination may occur as a result of the entrance of bacteria-laden room air into the transfusion apparatus during the phlebotomy, storage or administration period.

It is extremely dangerous to enter the bottle of stored blood at any time other than immediately prior to infusion of the blood.[10] It was found[70] that contamination was increased by exposure of the blood to room air during the transfusion, the air entering the bottle via the needle which is inserted into the diaphragm lid to facilitate the emptying of blood from the bottle.

However, the natural factors previously mentioned which operate to minimize the dangers of blood transfusion are claimed to have restricted the growth of bacteria thus introduced.[70]

Contamination from unnecessary entrance of air or needles into the bottled blood should be reduced by utilization of the newer collapsible plastic bags in blood collection, storage, and administration.[10] These obviate the need for an air vent, since they do not require displacement of air during their filling or emptying.[10]

No Preservatives

At present there are no chemical preservatives known which may be added prophylactically to blood to successfully prevent contaminated blood transfusion reactions.[88] In animal experiments[74] cortisone was found to be ineffective in suppressing the reaction caused by the infusion of either the bacterial endotoxin or the viable organism.

It goes without saying that the most effective prophylactic measure is an awareness of the dangers inherent in blood transfusion, an awareness which should result in fewer transfusions being prescribed and the smallest inoculum being ordered which will just meet the requirements of the patient.

The smaller the inoculum, the more minimal the hazard.[70] It remains for the future to develop safe and effective methods by which stored blood may be sterilized or bacterial growth suppressed,[10] either by radiation, chemicals, antibiotics, or at present undreamed of techniques.

Treatment. The therapy of contaminated blood transfusion reactions is frequently unsatisfactory because of the very nature of the etiologic agents involved and the pathologic mechanisms by which they act. In the first place the offending organisms are often resistant to most antibiotics. Although antibiotic therapy,[32] including intravenous broad-spectrum antibiotics,[10] has been recommended, there is no assurance that their administration will meet with success.[32]

Reaction May Continue

Secondly, even if the bacteremia is controlled and the offending organism destroyed, the reaction may continue and death may ensue by virtue of the action of the toxic bacterial products on the recipient's circulatory system, since the reaction is not the result of an infection *per se*, but rather an intoxication by products of bacterial metabolism produced during their multiplication in storage.[32] There is no known antidote at present effective against such a poison.[32]

In addition, the circulatory collapse characteristic of the contaminated blood transfusion is not associated with a significant reduction in blood volume,[88] and as a result, therapeutic blood transfusions are not of much benefit in the treatment of the circulatory failure.[32,88]

Obvious Procedure

Aside from the obvious procedure of discontinuing the transfusion when manifestations of a reaction appear, and administering broad spectrum antibiotics, there is little that may specifically be done in the therapy of such a reaction.

Viruses. The incidence of homologous serum jaundice following the intravenous infusion of blood or its derivatives has been the subject of a great deal of consideration. A significant proportion of those who receive such infusions also are the recipients at the same time of numerous needle punctures for other reasons, making the etiology of any ensuing jaundice difficult to ascertain with any certainty.[10,89]

The problem remains a vital but unsolved one, largely because there is no reliable test to detect carriers of the virus[10] and because the offending virus cannot be transmitted to experimental animals. It is possible for an individual to demonstrate serologic but not clinical manifestations of the disease.[90,91]

The disturbing fact remains, however, that the virus may be present in the blood stream of a blood donor in the absence of clinical or laboratory evidence of liver disease, and this carrier may be responsible for the transmission of a fatal disease to the recipient of his blood.[8,71,91] Thus far, there is no known procedure by which the virus may be detected in serum.[10,91]

It has been estimated that one in every 500 cases of fatal hepatitis is the result of blood transfusion. On the other hand, only three deaths from homologous serum hepatitis have been reported following the infusion of 18,000 consecutive transfusions, and another report claims only two or three deaths occurred after 36,000 transfusions.

Hepatitis

Although homologous serum hepatitis occurs as a consequence of the transfusion of whole blood, it develops with an even greater incidence following the administration of pooled plasma.[71,90] This, of course, is because one infected donor can contaminate a large pool of plasma and thus transmit the disease to numerous recipients.

The pooling of the plasma is undertaken to dilute and neutralize isoagglutinins, enabling recipients of any blood group to receive plasma without necessitating the preliminary determination of his group and the administration of compatible plasma.[71]

Pathologically the viruses of homologous serum and viral hepatitis are identical except for the difference in incubation periods of the two diseases they produce, the former being 30-150 days and the latter only 21 days.[90]

Others[10] have described two forms of jaundice which may appear following transfusion. In one the jaundice appears early (a few hours to several weeks after the inoculation) and is associated with fever and hepatitis.

The other is a prolonged afebrile type of jaundice, insidious in onset and developing later (1-6 months after the transfusion), any fever that occurs disappearing rapidly. There is no cross immunity between the two, and the latter type was labeled homologous serum jaundice.

The jaundice that develops as a consequence of viral liver disease must not be confused with that produced by the excessive destruction of red blood cells as a result of either incompatible transfusion reaction or of increased red cell fragility resulting from prolonged or improper storage of blood. And, of course, this hepatocellular type of jaundice must be differentiated from the obstructive type.[90]

Prophylaxis. There is no method absolutely effective in the prevention of homologous serum jaundice, and the administration of blood and its derivatives remains a calculated risk in this respect.[91] The infusion of as little as 2 cc of blood is reported[92] to be sufficient to produce this complication in the recipient.

Five Techniques

Nevertheless, there are five techniques available which will tremendously reduce the hazard of whole blood or plasma-transmitted viral disease, if they are intelligently and faithfully utilized. The first and obvious one is the prescription of blood or plasma as a therapeutic agent as infrequently as possible.

This involves the prevention and treatment of various hypotensive and anemic conditions with specifically indicated agents rather than blood or its derivatives.[93]

For example, the approriate therapy of iron dificiency anemia should be the administration of ferrous gluconate and a specific diet, not whole blood transfusions. In addition, blood substitutes should be administered as often as possible when the amount of blood or plasma estimated to be required for replacement is less than 500 cc.[93]

The second prophylactic procedure that should be undertaken is the careful screening of prospective donors for the history of contact with or presence of jaundice,[10,91] which may have occurred at any time during their lives.[94]

Thirdly, syringes, needles and lancets, the vehicles by which the disease may be transferred from one person to another, should be used for only one donor or patient at a time and heat-sterilized before use.[91] This requires autoclaving them for twenty minutes at 250°F or boiling them in water for thirty minutes.[91]

Fourthly, advantage should be taken of the fact that the virus of homologous serum jaundice tends to die as the plasma containing it ages in liquid form at room temperature. The fact that the storage of plasma for six months or longer at room temperature is a relatively effective method of preventing homologous serum hepatitis has been established[95] and confirmed.[96]

Plasma Pools

Finally, individual units or small pools of plasma should be administered when plasma is indicated and the above mentioned storage conditions cannot be fulfilled. It has been found[10] that refrigeration does not affect the organism and that the plasma-preserving process of freeze-drying also preserves the virus.[71]

This only emphasizes the advisability of utilizing the smaller units of plasma, when the latter has been stored in a frozen state or freeze-dried prior to its use.

Ultraviolet irradiation of whole blood, suggested[97] in 1947 as a means of sterilizing the blood, is impractical at present.[90] Although it is reported[97] to lessen the incidence of homologous serum jaundice, it is not a dependable method of destroying the virus.[71,98]

Various Methods

Various chemical methods[99] have been proposed for the inactivation of the virus of homologous serum jaundice. Nitrogen mustard in a concentration of 500 mg/1 was found[100] to be incapable of inactivating a particular strain of homologous serum virus in whole blood obtained from an individual with the frank disease.

Treatment. Therapy of homologous serum jaundice is essentially supportive and symptomatic. The prescription of a high carbohydrate (400 g), high protein (200 g) diet and bed rest has generally been advised.[101-103]

Spirochetes. Syphilis is readily transmitted by the transfusion of fresh blood. Most cases of transmission occur when the infected donor is in the incubation period or seronegative stage of the disease.[104-106] The secondary lesions of syphilis are usually the first manifestations of the disease to develop in the blood recipient, and they may appear a few weeks to five months after the inoculation.[107] They are more severe than when the disease is acquired in the usual way.[10]

Good Fortune

It is mankind's extreme good fortune, however, that the spirochete dies when stored at refrigerator temperature for 96 hours,[108] a fact that has repeatedly been confirmed.[109] Therefore, in addition to a thorough physical examination of the prospective donor and serology test on his blood for syphilis, adequate prophylaxis against this disease includes the storage of donated blood at refrigerator temperature for at least 96 hours. This simple procedure is remarkably effective in preventing the transmission of syphilis by blood transfusion.

Protozoa. Malaria may be easily transmitted from one infected person to another by transfusion of blood, since the plasmodium survives under all conditions in which red blood cells survive.[10] The interval between the onset of the disease in the donor and the time of his blood donation is of no significance in the transmission of malaria, some people remaining infective up to 25 years following the development of their malaria.[10]

Before a prospective donor who has lived in an endemic area should be accepted as a donor, he should have received malaria suppressive therapy while in the area and should have been asymptomatic for two years thereafter.[10] An infected donor is much more dangerous in nonendemic areas, because the vulnerability of recipients in these areas is much greater.[10]

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Preliminary Report on Experiency With BZ–55 on Ten Diabetics †

By T. E. Hauser, M. D. and E. B. Flanagan, M. D., Carlsbad, N. M.

During the past three months, we have used BZ-55 (Carbutamide)* on ten adult diabetics, all but one having been previously adequately controlled with insulin and diet.

Procedure: Nine patients were hospitalized for institution on BZ-55 therapy. One patient was treated ambulatory for financial reasons. All hospitalized patients had liver and kidney surveys consisting of BSP, TSB, cephalin flocculation, NPN, CBC, and urinanalysis. Insulin was discontinued in the majority one day before admission or the day of admission.

The BZ-55 was started with a daily dose of 2.5 gms. on the first day, 1.5 gms. on the second, and maintained on 0.5 gms. b. i. d. Fasting blood sugars were taken before the onset of therapy with blood sugars taken also at 2:00 P. M. during hospitalization. There was no attempt to change the diet. Following discharge from the hospital, periodic office visits, blood sugars, white blood counts, and urinanalyses have been made.

Case Histories:

Case 1

A 62-year-old motel clerk, duration of diabetes five weeks, 145 lb., followed constantly since July 1953, at which time he had a small stroke with elevated blood pressure, 160/105. On Apresoline 100 mgm. daily to January 1955 when blood pressure was 180/110 and placed on Rauvera q. i. d. Seen periodically in office and felt well, maintained on Rauvera. On 7-19-56, suffered another stroke with paresis of right arm and leg and aphasia.

Routine lab tests all negative. On 8-8-56, became quite irrational. Felt depressed and washed out. Again hospitalized and found to have 3+ glycosuria and fasting blood sugar of 270 mgm. per cent. Was well controlled on 10 units regular insulin t. i. d. On 8-31-56 was placed on BZ-55 without insulin, 2.5 gms. first day and 1.5 gms. daily. No side effects. Fasting blood sugar now 130 mgm. per cent. Patient cheerful and well oriented.

Case 2

A 56-year-old real estate broker, duration of diabetes 36 months, 210 lb. In 1953, treated for diabetes and hypertension. Stayed on treatment for about six months, then discontinued all medication and insulin. First seen on 5-8-56 complaining of anterior chest pain, dizziness, dyspnea. Noticed nocturia 4-5 times nightly and swelling of abdomen for about three months. Temperature - 100, pulse 110, respirations 20, blood pressure 200/130. Lung sounds distant, with rales in both bases, 4+ bilateral pretibial edema.

His decompensation treated with Digitalis, etc. On 7-23-56, insulin was discontinued and BZ-55 started, 2.5 gms. first day, 1.5 gms. the second. On 8-28 blood sugar was 110 mgm. per cent, so BZ-55 reduced to one gm. daily. Since this time, has remained well. Urine sugar free. No side reactions. Blood pressure 140/80 on combination Serpasil and Apresoline q. i. d., Crystodigen 0.2 mgm. daily.

Case 3

A 74-year-old female housewife, hypertensive, duration of diabetes 16 months, 144 lb. Initial blood pressure 200/100. 160/70 after control with Serpasil. Excellent control on 10 units NPH insulin daily. 4+ glycosuria when insulin discontinued for several days in February of 1956. Insulin restarted. Fasting blood sugar was consistently between 130 and 140 mgm. per cent. On one gm. BZ-55 daily and no insulin since 7-2-56, she is under excellent control. Fasting blood sugar is 140 mgm. per cent, and there is no glycosuria.

Case 4

A 47-year-old female housewife and receptionist, hypertensive, duration of diabetes 16 months, 130 lb. Initial B/P 200/100, 170/80 with Apresoline. Excellent control on 10 units of NPH insulin daily. 3+ to 4+ glycosuria when insulin discontinued prior to BZ-55 therapy. Fasting blood sugars 152 to 200 mgm. per cent. On one gm. BZ-55 daily and no insulin since 7-4-56, she is under excellent control. Fasting blood sugar is 131 mgm. per cent, and there is no glycosuria.

Case 5

A 43-year-old male farmer, duration of diabetes five months, 145 lb. Good control on 45 units Lente insulin daily. Fasting blood sugar 120 mgm. per cent. On one gm. BZ-55 daily and no insulin since 7-10-56, he is under excellent control. Fasting blood sugar 120 mgm. per cent, and there is no glycosuria. Weight remains unchanged. Checks urine t. i. d. with testape, and is always negative.

Case 6

A 46-year-old male common laborer, duration of diabetes four months, 210 lb. No insulin therapy before BZ-55. Fasting blood sugar 150 mgm. per cent. Under excellent control on one gm. BZ-55 daily since 6-10-56. Fasting blood sugar 130 mgm. per cent, with no glycosuria.

Case 7

A 41-year-old male common laborer, duration of diabetes seven months, 190 lb. Good control on 40

*BZ-55 (Carbutamide) furnished by Eli Lilly and Co. through its local representative, Bill Sprague, Carlsbad, N. M.

† An article by Dr. Hauser on Orinase will be published in a subsequent issue of SOUTHWESTERN MEDICINE.

units NPH insulin daily. Fasting blood sugar 135 mgm. per cent and no glycosuria. On one gm. BZ-55 daily and no insulin since 7-17-56, is under excellent control, with no glycosuria.

Case 8

A 65-year-old female housewife, duration of diabetes five years, 128 lb. First seen in August, 1953 with severe urinary tract infection and ASHD with decompensation. Always an unstable diabetic because of frequent urinary tract infections due to double kidney and ureter on right. On Crystodigen 0.1 mgm. daily, and 20 units NPH insulin. On 7-26-56, started on BZ-55 three gm. daily and 10 units NPH insulin. Fasting blood sugar 240 mgm. per cent. BZ-55 reduced to two gm. daily and insulin discontinued on 8-17-56. No glycosuria, and blood sugar 160 mgm. per cent. Prognosis as to effectiveness of BZ-55 is guarded.

Case 9

A 56-year-old female housewife, hypertensive, duration of diabetes 28 months, 128 lb., with diabetic retinitis. Hypertension controlled with Inversine from 230/110 to 180/80. Allergic to insulin but finally well controlled on five units Ultra Lente insulin daily. Fasting blood sugars ranged from 78 to 150 mgm. per cent and no glycosuria. On .5 gm. BZ-55 daily and no insulin since 6-18-55, is under excellent control. No glycosuria, and fasting blood sugars range from 72 to 84 mgm. per cent.

Case 10

A 30-year-old male welder, duration of diabetes 12 years, 160 lb. with diabetic neuropathy and diabetic retinitis. Good control on 40 units NPH insulin daily. Fasting blood sugar 245 mgm. per cent. On 1.5 gm. BZ-55 daily since 8-28-56, there is no response except perhaps regulation of glycosuria with smaller doses of insulin. Fasting blood sugars range from 135-330 mgm. per cent.

Comment:

While there is no doubt as to the hypoglycemic effect of BZ-55, the site of action is not known at present. It would appear from the experience of others that it works best in those diabetics who have some functional acinar tissue.

The patients whom we have had on BZ-55 have done well with the exception of Case 10, who has continued to need insulin. He has had diabetes for twelve years, and to date has not responded to BZ-55, but it appears to have helped in regulating his glycosuria with smaller doses of insulin.

Drug rash, agranulocytosis and drug fever reactions have been reported in the literature, the overall side effects in a large series of cases being 6.5 per cent. Recently, there have been reported three deaths due to agranulocytosis.

While nine of our ten patients have had excellent control and have been able to discontinue the use of insulin, the period of follow-up has been relatively short.

Opinions Stated

We feel that BZ-55 may well have a place in treating the older diabetic when it can replace insulin therapy. It is possible to fore-see the addition of BZ-55 to insulin therapy to better control the brittle diabetic in the future.

BZ-55 has worked well, so far, in replacing insulin in nine of the ten patients in this report, the patients having required from five to forty-five units of insulin daily.

We believe one value of this report stems from the fact that these patients were observed in an active clinical practice on a periodic office call basis, rather than many investigative studies that are done on institutionalized patients.

Summary:

1. BZ-55 was given to ten diabetics during the past three months.

2. All but one have been able to discontinue insulin and remain in good control.

3. BZ-55 appears to work best in the elderly diabetic with a short history of diabetes.

4. Continued observation is necessary to detect sign of toxic effects to BZ-55.

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Lilly Suspends Clinical Trial of Carbutamide

Eli Lilly and Company has announced the suspension of the fifteen-month clinical trial of carbutamide, or BZ-55. Carbutamide is a sulfonamide derivative which controls many cases of diabetes when given by mouth.

"We deeply regret that this compound apparently does not meet the rigid requirements for a drug that must be taken throughout life. At the same time, we are grateful that the study of carbutamide was broad enough and thorough enough to uncover its limitations," a Lilly spokesman said.

CPC

Clinical Pathological Conference of The El Paso Medical Society Tumor Clinic

Dr. Maynard Hart, chairman

Presented at the Texas District One Medical Association Meeting at Pecos, February 12, 1957 — Case No. 15,684

Dr. Maynard Hart:

This case presentation of the El Paso County Tumor Clinic will be in the form of a clinical pathological conference. I will not read the history in detail as Dr. Craige prefers to discuss it paragraph by paragraph.

Dr. Branch Craige:

The position of the clinician in a CPC is an honored one, very much like the position of a bull at a bullfight; except here, instead of having only one bull fighter to cope with, the clinician is faced with a group of three pathologists. It seems really like weighing the scales against the poor bull. I shall read the history paragraph by paragraph and discuss the differential diagnosis as we go along.

Present Illness: This 26 year old Mexican male patient was admitted to El Paso General Hospital March 22, 1956. The chief complaint on admission was extreme weakness, associated with dizziness and palpitation. The patient advised that his illness dated back to January, 1956, at which time he experienced increased fatigability, associated with intermittent attacks of fever with occasional chills.

The weakness had steadily progressed and four weeks prior to admission to the hospital, that would be about six weeks after the start of his illness, the patient had periodic episodes of epistaxis and some bleeding from the buccal mucosa. Approximately two weeks prior to admission, the patient developed purpuric spots that started over the arms and spread over the chest and abdomen.

"Little Spiders"

The patient stated that these looked like "little spiders," and that the purpuric areas were associated with a mild rash that was most marked on the volar aspect of the forearms but was also present on the abdomen and was associated with some pruritus.

This lasted several days, but the rash gradually faded. The patient stated that he thought he had a fever at this time, and that he frequently felt chilly.

Also, the patient complained of slight blurring of vision that developed about one week prior to admission and was still bothersome at the time of admission to the hospital.

Summary

In summary, we have a 26 year old male complaining of weakness and palpitation and dizziness and evidence of purpura with fever and chills.

Past History: The past history was essentially negative. A history of the usual childhood diseases was obtained, but there had been no serious illnesses. The patient had lived in Chihuahua most of his life, but had spent two of the past three years in Florida as a fruit picker. The father of the patient was dead of natural causes. It would be interesting to know if these natural causes were blood diseases or not, and the mother, two brothers and one sister were living and well.

Physical Examination: Physical examination at the time of admission to the hospital revealed a young male adult weighing approximately 135 pounds. The temperature on admission was 99.8 degrees. The pulse rate was 80 and uniform, and respirations were 20 per minute.

The blood pressure was normal. There was a marked pallor. No generalized lymphadenopathy could be demonstrated. The spleen was not palpable, and we read further down on the paragraph, "the liver was not palpable" either.

The pupils reacted to light and accommodation. Examination of the fundi revealed scattered small retinal hemorrhages. The buccal mucosa was smooth, and there were no ulcers demonstrated, but very small sub-mucosal hemorrhages on the buccal surface and on the gingiva were noted.

No Neck Rigidity

There was no neck rigidity. The chest revealed no dullness and the breath sounds were normal. It doesn't mention whether or not the sternum was tender.

The heart was of average size and there were no murmurs, which would tend to be against subacute bacterial endocarditis. The abdomen was flat and soft and there were no masses palpable. The external genitalia were grossly normal. The neurological examination was negative.

The physical examination, then, adds very little to what we knew from the history. Thus, we have a

young man, apparently with pallor and anemia, purpura, fever, but no enlargement of the lymph nodes, spleen or the liver.

Laboratory Data: Laboratory data revealed a red blood count of 1,400,000 with 4.4 grams hemoglobin. The white blood count was 7,500 with 66 per cent lymphocytes and 34 per cent granulocytes, and approximately one-half of the granulocytes were juvenile forms or metamyelocytes.

We should remember that in acute leukemia very commonly the first blood count will show a lot of lymphocytes because the first blood count is usually done without thinking about leukemia and the young forms are very often mistakenly counted as lymphocytes.

No nucleated red blood cells were reported. The red blood cells appeared moderately hypochromic. The urine analysis was negative. It seems peculiar, if this young man is bleeding from everywhere else, that there would be no red blood cells in the urine. Specific gravity was 1.026. That would imply, along with the negative urine, pretty good kidneys.

Up to this point, then, we have a disease manifested by purpura with anemia and fever. Could this disease, then, be due to a primary disease or one of the many secondary purpuras? Is it due to intoxication, perhaps exogenous toxin, a poison of some sort? Is it due to an endogenous toxin, such as one might get from uremia? This is unlikely with the normal urine and the high specific gravity. Is it due to some infection? Or, is it due to a primary blood disease, like leukemia? Or, could it be due to something displacing the bone marrow, such as myelophthisic anemia? Well, we'll read on —

Serology Non-Reactive

The serology was non-reactive, and febrile agglutinations, including typhoid, paratyphoid, brucella and Proteus OX 19 were negative. A blood smear for malaria plasmodium was negative. The coagulation time, by capillary tube method, was six minutes and 45 seconds and the bleeding time was eight minutes. The prothrombin time was 90 per cent of normal.

Apparently he is not bleeding from lack of prothrombin. The red blood cell fragility study was within normal limits. Again, this is not a hemolytic anemia.

The sedimentation rate was 25 mm. in one hour, by which method it doesn't state. The blood sugar was 95 mg. per cent, and the total protein was 7.6 grams with 5.9 grams albumin and 1.7 of globulin.

Urea nitrogen was 16 mg. per cent, which confirms the observation that he is not bleeding from uremia. The direct van den Bergh test was negative and the indirect van den Bergh test was 0.3 mg. per cent. Apparently he is not losing his blood by acute hemolysis or he would have some evidence of weakness.

Stool cultures were negative and no ova or parasites were demonstrated. An L. E. test isn't mentioned, but again in a male with a normal urine, lupus erythematosus is not very likely.

At this time a radiographic examination was done. Would Dr. Boverie like to show the first x-ray?

Dr. Robert Boverie:

There is a little accentuation of the markings there, but I would certainly guess that this is the normal situation to this man. The lung fields are clear. I don't see any nodules, any lesions, at all. I would call it a normal chest.

Dr. Jack Postlewaite:

What about the spleen?

Dr. Boverie:

Well, it doesn't appear to be enlarged nor does the liver appear to be enlarged.

Dr. Rita Don:

A slide of the peripheral blood shows the marked anemia which the patient had. He also had a marked thrombocytopenia. The granulocytes present were occasional myeloblasts, occasional myelocytes and mature polynuclear neutrophiles. In the bone marrow, the picture was essentially the same.

There was an increase in myeloblasts and undifferentiated myelocytes, and we had cells showing Auer bodies.

Dr. Craige:

We have, then, at this point, evidence that this patient had thrombocytopenia which would account for the hemorrhagic tendency; and in the peripheral blood, unusually young cells of the myelocytic series and in the bone marrow, an unusually large percentage of cells of the myelocytic series including a large percentage of young forms.

Course of Illness: Approximately 12 hours after admission the temperature had risen to 100.6 degrees and the patient complained of chilliness, but the patient was not uncomfortable and was able to take a bland diet and rested quietly. A bone marrow aspiration was done and a recheck of the peripheral blood was made.

At this time the peripheral blood revealed the presence of metamyelocytes and myelocytes with a rare myeloblast. The bone marrow also revealed a predominance of cells of the myelocytic stage, and approximately 10 per cent myeloblasts with a granuloerythrocytic ratio of approximately one to one.

Treatment: General supportive measures were carried out, including the transfusion of three units of whole blood. On March 26, four days after admission, the patient had a recurrence of epistaxis and developed purpuric areas over the arms, abdomen and chest.

There was also some bleeding from the buccal mucosa and gingiva. The patient continued to run a

low grade fever, and the temperature fluctuated between 99 and 100.6 degrees. The pulse was stable and rarely exceeded 80 per minute.

A platelet count revealed only 3,000 platelets on March 26, and the reticulocyte count was 1.5 per cent. The count there confirmed Dr. Don's observation from the smear that the platelets were diminished. There is some evidence of production of young red cells in a reticulocyte count of 1.5 per cent.

Repeat peripheral blood studies showed a persistence of relatively immature cells that were interpreted as metamyelocytes or myelocytes. In addition, there now appeared an occasional nucleated red blood cell at the normoblast level. The total white blood count on March 28 had risen to 13,000. But, we note only to 13,000.

The total red blood count was 2,400,000, after two additional units of whole blood. Heparin activity studies and the blood culture were negative.

The negative blood cultures, then, going back to what we mentioned a while ago, gives evidence against bacterial endocarditis.

Doses Increased

On April 1, the patient was started on Meticorten, 5.0 mgs. every four hours for 10 days. This was increased to 10.0 mgs. every four hours for 12 days and then decreased to 5.0 mgs. every four hours again and continued.

General supportive measures were continued, including whole blood transfusions, antibiotic therapy and ascorbic acid and Meticorten. The bleeding from the gums and nose persisted and the temperature fluctuated up to 105 degrees.

Repeat blood cultures were negative. Amidopyrine was given in an attempt to control the fever. A repeat chest film on May 4 revealed bilateral gross infiltrations throughout both lung fields.

Dr. Boverie:

The second x-ray is a portable film, by the way. The lungs are filled with fluffy lesions and the best we can do is give a differential diagnosis. This might be most anything. I would think this may be a pulmonary edema. Any of the granulomatous infections could produce this appearance, metastatic carcinoma or possibly alveolar cell carcinoma may produce such lung fields.

I think pneumonokoniosis might do it. Of course, we know that this is a young man and that a normal film had been made a few weeks before. You wouldn't expect pneumonokoniosis to develop in that short a time.

This is about as far as we can go. My first thought on this film is that it is either a generalized inflammatory process or a pulmonary edema. However, the possibility of metastatic neoplasm or alveolar cell carcinoma cannot be ruled out.

Dr. Craige:

May I ask you? This young man had purpura everywhere else almost. Could purpuric lesions in the lungs give such a picture?

Dr. Boverie:

Well, it possibly could. I have never seen purpuric lesions in the lungs that produced such a picture as this, but I am sure it possibly could if it got that far advanced.

Dr. Craige:

Have you seen myelogenous leukemia infiltrate the lungs to that extent?

Dr. Boverie:

Yes, I have. Not possibly to that extent, but that was one thing I perhaps should have mentioned in the differential diagnosis because the leukemias notoriously can give peculiar changes on the x-ray film.

Dr. Craige:

The clinical history gives us very little more to work with. There is only one more sentence: The patient failed to respond and expired May 6, 45 days after admission.

This is only about four months after the onset of this illness. The diseases that we have been thinking about in differential diagnoses we have mentioned as we have gone through the protocol. I think that with the findings in the bone marrow that Dr. Don has presented, we are limited to one diagnosis, namely, an acute subleukemic myelogenous leukemia.

There are many points in favor of this diagnosis. There was a rather abrupt onset. The age of the patient is relatively young.

There is little in the history that is against such a diagnosis except, as you may have noted, that the liver and spleen and lymph nodes were (the liver and spleen are the important points here) not enlarged, but in acute leukemia occasionally they are not.

Consistent With Diagnosis

The thrombocytopenia, the anemia, the hemorrhagic tendencies and the low grade fever and, ultimately, the high fever are all consistent with such a diagnosis. The negative cultures, the absence of cardiac murmurs when first seen, the normal BUN would help exclude other diagnoses.

The main point about which I remain puzzled is what is this appearance in the lung fields? I should hazard a guess that it is not leukemic infiltration.

It seems to me that if that much infiltration due to myelogenous leukemia were to occur in the lung fields that we should have had by now some enlargement of the liver and spleen or evidence of the leukemic infiltration elsewhere also.

So, my diagnosis would be a subleukemic acute myelogenous leukemia; and I think that the lesions in the lungs are probably edema with or without some hemorrhages.

Dr. Postlewaite:

This disease could be inflammatory or infectious. We could have here nothing more than the blood picture of a myeloid leukemoid response of the blood in which there is the shift of the white cells to the left with low platelets and anemia present.

This leukemoid change of the blood may occur with extreme infections and burn itself out with a person with a poor resistance. The example I think of is tuberculosis. You can certainly get confused in El Paso with tuberculosis.

The second classification that one shouldn't overlook is neoplasia and Dr. Craige has discussed it well, coming to the conclusion that the bone marrow says what the patient died of.

Let's challenge it a minute and suggest some other disease that may not have come up on one puncture of the bone marrow. I think we have made a lot of mistakes clinically because we have accepted the one puncture method of bone marrow study.

For example, Hodgkin's disease at this age is classically the undefined, undiagnosed disease until the termination of the case comes into the pathologist's hands, and then we are embarrassed. We might have offered the patient something.

But there was nothing to suggest Hodgkin's disease physically, and the x-ray might have shown it in the mediastinum and did not. I suppose it's ruled out for that reason.

Another group to be considered is the collagen diseases. The patient might not have had lupus erythematosus but polyarteritis nodosa is classic for the male of this age. The point against it again is the kidney.

I can't see how a terminal disease could occur without the kidney showing this general vascular dysplasia. I asked for the size of the spleen.

One should never diagnose hypersplenism without a palpable spleen.

It should perhaps be kept in mind that there were no nucleated red cells on the original blood smear suggesting exhaustion of the bone marrow. One wonders why nucleated reds were not present until replacement therapy was given.

The appearance of nucleated red cells in any significant proportion of the peripheral blood is a very bad prognostic sign. How the man could have entered the hospital with this low blood count and not have nucleated red cells puzzles me.

It may have been due to some sensitivity problem in which the platelet was the sensitized cell and in which the spleen was hyperactive in its function.

Dr. Frederick Bornstein:

What is your diagnosis?

Dr. Postlewaite:

I don't have one, really. A leukemoid reaction must be considered.

Dr. Craige:

A leukemoid reaction was considered, but we have evidence of primary hematologic disease, namely a striking anemia, immature red blood cells, nucleated red cells in the peripheral blood and a very striking abnormality of the platelets.

Dr. Hart:

I think one factor that might be considered here against leukemoid reaction is the relatively low white count, unless, as Dr. Postlewaite brought out, it is a burned out leukemoid reaction, but ordinarily in a leukemoid reaction you get a pouring out of all elements of the bone marrow, and I would expect to see erythroblasts in the peripheral blood and many nucleated red cells and all stages of granulocytes, not at a fairly definite level like we have here.

There is one little sneaky thing that we did here that we sometimes have to do in CPC's; there were blasts forms in the peripheral blood as Dr. Don presented it.

We didn't mention blasts, we said there were metamyelocytes and I think that Dr. Craige is correct that probably some of the cells that were interpreted as lymphocytes were micrometamyelocytes.

Dr. Bornstein:

Dr. Don, would you please summarize all the findings from the hematological standpoint?

Dr. Don:

He had a severe anemia, he had a severe thrombocytopenia, and in his peripheral blood picture he had myeloblasts, undifferentiated myelocytes and then there was a hiatus with mature polys being present.

The undifferentiated myelocytes were the predominant cells. The picture in the bone marrow was essentially the same. There was a great immaturity in the myeloblasts and the undifferentiated myeloblasts. Again the hiatus was present.

This is referred to as the hiatus leukemicus of Naegeli in which you have an absence of the more mature forms of myelocytes, metamyelocytes, stab forms. They were completely absent from the smear itself, it went from the undifferentiated, extremely immature myelocytes to mature polys.

Dr. Hart:

The fact is that this actually was not a true aplastic anemia inasmuch as we found a 1.5 per cent reticulocyte count and later on nucleated red blood cells began to appear, so I assume that there was no knocking out of the erythropoietic system by a toxin.

Diagnosis of Tumor Clinic: Myeloid leukemia.

Dr. Craige's diagnosis: Acute sub-leukemic myelogenous leukemia.

Pathological diagnosis: Generalized tuberculosis, especially of the thymus, lungs, liver, spleen, lymph nodes and bone marrow.

Pathological Discussion:

Dr. Frederick P. Bornstein:

At autopsy we found the body of a Mexican male looking considerably older than his stated age. He weighed approximately 60 kilograms. There was a mass in the region of the thymus. The mass was of soft consistency and measured about four by four by six cm. The cut surface showed grayish-white tissue which contained numerous small cystic cavities filled with thick greenish pus.

The heart showed superficial petechial hemorrhages. The lungs weighed 2,300 grams. They were extremely firm. The pleurae were studded with numerous bright yellow, soft nodules and a few gray granular nodules.

The cut surface of the lung was dark red. The parenchyma was consolidated and contained the same type of nodules as seen on the surface. The liver showed the same type of nodules on the surface as well as in the parenchyma. The spleen which weighed 450 grams had the most unusual appearance.

Beneath the capsule, numerous yellowish and gray nodules were visible which varied from a few mm. to several cm. in diameter.

Figure I.

Spleen. Cut surface. Pattern highly suggestive of Hodgkin's disease.

The cut surface of the spleen had lost the normal pattern and instead the surface was densely packed with sharply circumscribed yellowish nodules which gave the spleen an appearance very suggestive of Hodgkin's disease. (Figure I) There was no gross evidence of leukemia.

From the findings at the gross examination I then had the impression that this was not a leukemia but might be a Hodgkin's disease. However, a definite diagnosis had to be deferred for the microscopic examination. The microscopic examination showed a rather peculiar picture, most typical in the spleen. (Figure II)

There were obvious granulomatous foci, the center of which was composed of necrotic material and segmented granulocytes, all surrounded by epitheloid cells.

The picture was somewhat suggestive of a fungus infection, however, special stains revealed the presence of innumerable acid-fast rods typical of tubercle bacilli.

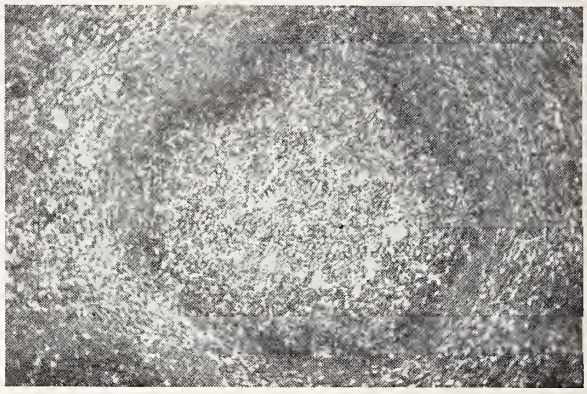

Figure II.

Spleen. Microscopic picture. Purulent granuloma, anergic tuberculosis.

None of the microscopic sections revealed any evidence of leukemia. This picture was fairly uniform in all the organs and acid-fast organisms were demonstrated in all lesions.

Interpretation

Faced with these clinical and pathological findings, what is the interpretation of events? There is very little doubt in my mind that the patient suffered originally from a leukemia and not from a leukemoid reaction. Numerous hematologists to whom we have submitted the slides have agreed with this interpretation.

Reports have been published of cortisone having produced a temporary remission of a leukemia.

We, therefore, have to assume that the cortisone on the one hand produced a remission of the leukemia and on the other hand stimulated a generalized miliary tuberculosis. We all are aware that cortisone has this capacity.

It should be especially emphasized that the gross and histological picture was not typical of tuberculosis, but showed an anergic reaction with a total absence of Langhans' giant cells and a heavy prevalence of segmented granulocytes.

Summary

In summary, we had a patient here with a condition in which cortisone was definitely indicated. Cortisone produced a remission of the original disease and at the same time became responsible for the aggravation and promotion of the final illness.

One DONNAGESIC Extentab gives 10 to 12 hours of steady, high-level codeine analgesia. Rebuilding of effective analgesia with repeated doses is avoided. Patient comfort is continuous.

There is more pain relief in DONNAGESIC Extentabs than in codeine alone — codeine analgesia is potentiated by the phenobarbital present. In addition, phenobarbital diminishes anxiety, lowering patient's reactivity to pain.

DONNAGESIC is safer, too, for codeine side effects are minimized by the peripheral action of the belladonna alkaloids.

extended action—The intensity of effects smoothly sustained all-day or all-night by each DONNAGESIC Extentab is equivalent to, or greater than, the maximum which would be provided by q. 4h. administration of one-third the active ingredients.

Donnagesic™ Extentabs*

extended action tablets of CODEINE with DONNATAL®

once every 10-12 hours and for all codeine uses

	DONNAGESIC No. 1 (pink) AHR	DONNAGESIC No. 2 (red) AHR
CODEINE Phosphate	48.6 mg. (¾ gr.)	97.2 mg. (1½ gr.)
Hyoscyamine Sulfate	0.3111 mg.	0.3111 mg.
Atropine Sulfate	0.0582 mg.	0.0582 mg.
Hyoscine Hydrobromide	0.0195 mg.	0.0195 mg.
Phenobarbital	48.6 mg. (¾ gr.)	48.6 mg. (¾ gr.)

Robins **A. H. ROBINS CO., INC., RICHMOND, VIRGINIA** *Ethical Pharmaceuticals of Merit Since 1878*

*Reg. U. S. Pat. Off., Pat. applied for.

Dear Doctor:

I, John Droe, was a bachelor I did my own cooking and ate only those things which pleased me most.

One evening, I stopped at the butcher shop and bought four pork chops. 'Twas a veritable feast. But soon after I finished eating, the feast began to trouble me and trouble me and trouble me a common occurrence.

I hied myself to Dr. Jones who reached into his experience for some sound dietary advice and into his drawer for some Bilogen samples he had "Take two of these now with water for relief and here's a prescription for some to keep on hand in case you have this trouble again. But don't overload your digestive tract as you have been, and stay away from so many rich foods. Moderation in diet is what you need."

The Bilogen worked so well that I felt better before I got home I took Dr. Jones' advice and stayed away from rich foods as much as possible. But whenever I had some trouble, I found that Bilogen gave me the help I needed. In fact, I felt so much better that I even got married.

John Droe

P. S. Why don't you write to Organon Inc., Orange, N. J., for a trial supply of Bilogen for one of your patients?

Southwestern MEDICINE

VOL. XXXVIII MAY, 1957 No. 5

CURRENT THERAPY

Rheumatic Fever*- Postcommissurotomy Syndrome

By Jack A. Bernard, M. D., F. A. C. P., El Paso

As more mitral commissurotomies are being performed, we are more likely to be confronted with the so called "postcommissurotomy syndrome". Its incidence is reported as being from 10 to 30 per cent. It may occur as early as ten days after operation and has occurred as late as fourteen months postoperatively.

It does not appear to be due to acute rheumatic fever, bacterial infection, pulmonary infarction or the direct trauma of surgery alone. A similar complication has not been observed following cardiac or thoracic surgical procedures in non-rheumatic patients, for example, in congenital heart surgery or other thoracic operations on the heart such as cardiopericardiopexy.

Chest Pain and Fever

The syndrome is characterized by chest pain and fever, usually sharp sticking pain, together with a less prominent and frequent cough, hemoptysis, dyspnea and arthralgias. Evidence of pericarditis and pleuritis is obtained, with leukocytosis and elevated erythrocyte sedimentation rate. Bacteriologic studies yield negative results.

Penicillin prophylaxis is ineffective and antibiotics fail to modify the course. Salicylates appear to abbreviate the illness.

No significant change in the antistreptolysin-O titer occurs. The C-reactive protein seems to be the most sensitive laboratory test and the most useful in management.

It has been suggested that the syndrome represents a self-limited form of pericarditis and pleuritis induced by the trauma of surgery in patients with rheumatic heart disease.

Salicylate suppressive therapy therefore may be indicated postoperatively for all commissurotomy patients as they have been shown to be helpful when the syndrome appears.

Summary

In the diagnosis of rheumatic fever, the antistreptolysin-O determination is recommended to determine recent streptococcal infection. C-reactive protein determinations are recommended as a test for rheumatic activity.

For prophylaxis, oral or repository penicillin is recommended.

In the treatment of rheumatic fever, salicylates alone, and or, the steroids for carditis are recommended.

Alertness for the "postcommissurotomy syndrome" and its response to salicylates is indicated.

* This is the concluding article of the current series on Rheumatic Fever by Dr. Bernard.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

(Continued)

11. "Menstruation is often considered very important as a cause of loss of iron from the body, but Moore points out that not more than about 650 ml. of blood are lost in a year by the average woman. A person who gives two blood donations a year may lose a considerably greater amount." *loc. cit.,* Page 65.

12. "A pulse rate of 100 or more is a good index that blood volume is below about 80 per cent; on the other hand, a pulse below 100 does not exclude a blood volume which is well below 80 per cent. Profuse sweating is almost confined to those cases with a blood volume of less than 70 per cent." *loc. cit.,* Page 68.

13. "Again, though the giving of ice-cold blood may cause local discomfort and venospasm, these are trifling considerations in dealing with a severe case of oligaemic shock. The blood should be given straight out of the refrigerator if necessary." *loc. cit.,* Page 69.

Widespread Belief

14. "Unfortunately, there is a widespread belief that the drip-technique is a general safety measure, applicable to all types of transfusion. In the initial treatment of oligaemic shock, blood must be administered in a rapid stream. As a rule the first 500 ml. should be given in five to ten minutes; the second 500 ml. should be given equally rapidly in most cases. These rates of transfusion cannot be attained by simply allowing the blood to run in under gravity through the standard giving needly lying in a peripheral vein. A rise in systolic pressure to 100 mm. of mercury is not indication for stopping the transfusion." *loc. cit.,* Page 69.

15. "Thus, transfusion should be continued not only till the systolic pressure rises to above 100 mm. of mercury, but also until there are signs of the relief of peripheral circulatory failure; that is to say, until the pulse becomes fuller and the extremities warmer. The warmth of the patient's nose is the most reliable guide to skin blood flow." *loc. cit.,* Pages 69, 70.

16. "If an injured person whose blood pressure is low, fails to respond to transfusion, it is usually for one of three reasons. (1) Transfusion may have been begun too late and the patient may be in the condition which has sometimes been described as "irreversible shock." (2) The patient may still be losing blood, so that transfusion is not succeeding in restoring blood to an adequate level. (3) There may be an infection." *loc. cit.,* Page 71.

Immune Antibodies

17. "All that can be done, when a long series of spaced transfusions has to be given to a patient, is to be constantly on the watch for the development of immune antibodies. In practice two steps are recommended. Firstly, before each transfusion, test the patient's serum against the donor's cells, (a) in albumin and (b) by the indirect Coombs tests; secondly, immediately after every transfusion take a venous sample and examine the plasma for free haemoglobin or an increased content of bilirubin." *loc. cit.,* Page 79.

18. "It is suggested that if a patient with a very low haemoglobin concentration has to be transfused, an initial transfusion not exceeding 250 ml. of a concentrated red cell suspension (i.e., the red cells from a single bottle of stored blood) should be given at a low drip rate (taking four to six hours). The transfusion should be stopped immediately if any untoward signs develop. If this transfusion does not provoke such signs, it can be repeated after twenty-four or forty-eight hours. Each transfusion of this amount should produce a rise in haemoglobin of 1.0-1.5 g. per cent." *loc. cit.,* Page 92.

Operation Safe

19. "The operation rarely if ever does any harm to the patient, and probably never increases the risk of gangrene." (concerning arterial embolectomy) Peripheral Vascular Disorders; Peter Martin et al;*Edinburgh and London,* 1956; p. 466.

20. "The neuropathies complicating diabetes not only affect the sensory nerves, but also the sympathetic nerve fibres with the result that vasomotor control is absent and the circulation in the digits does not respond to bodily heating and cooling."*Loc. cit.* p. 376.

21. "Many neurotic illnesses turn out to be atypical depressions and the patient recovers spontaneously after a year or two of waiting; and most neurotic illnesses have high remission rates whatever the type of treatment given." *British Medical Journal;* Sept. 29, 1956; p. 761.

(To be continued)

"POINTERS"

From the Case Records of the Massachusetts General Hospital,* 1953

(Continued)

25. "I do not know how anybody else interprets mid-abdominal tenderness, but I do not even palpate in the midabdomen for tenderness because I do not think anyone can interpret tenderness felt over the great vessels. To me midepigastric tenderness alone means nothing whatsoever. Tenderness to mean anything to me must be on either one side or the other of the midline." *loc. cit.;* p. 249

26. "Small bowel obstruction causes sudden onset of colicky pain; biliary tract disease typically causes a dull pain at first which grows worse and worse; and the physical examination may be entirely negative early in an attack of biliary tract disease." A composite; *loc. cit.;* p. 248

27. "Leaking (abdominal) aneurysm may ooze very slowly and produce intermittent episodes of severe pain, and the patient can go on for months. I know of a patient who went two years before he had another leaking episode." *loc. cit.;* p. 291

28. "In the presence of congenital heart disease the development of signs of focal brain disease with fever indicates brain abscess until proved otherwise; whereas the development of a similar neurologic picture in rheumatic heart disease is more likely to be indicative of subacute bacterial endocarditis with infected embolization to the brain." *loc. cit.;* p. 376

Abdominal Sinus

29. "An abdominal sinus that fails to heal suggests an underlying tumor, an underlying foreign body, tuberculosis and a mycotic infection, of which actinomycosis is the most likely. This may be an oversimplification of the problem, but in a young patient with these x-ray findings I think it is a reasonably inclusive list." *loc. cit.;* p. 414

30. "The diagnosis of unresolved pneumonia is a dangerous one to make. I think an unresolved pneumonia lasting for five months usually turns out to be cancer, tuberculosis, lung abscess or a foreign body obstructing a bronchus." *loc. cit.;* p. 462

31. "It is very easy to confuse the deformity of the duodenum resulting from ulceration and that from prolapse of gastric mucosa or even a gastric polyp into the duodenum; we have made errors both ways in that type of situation." *loc. cit.;* p. 499

32. "We have had 2 or 3 dissecting aortic aneurysms, and a few have been reported elsewhere, in which the dissection bulged so much that it simulated the ordinary saccular aneurysm and was mistaken for a syphilitic or arteriosclerotic aneurysm." *loc. cit.;* p. 573

Thyrotoxicosis

33. ". . . patients with much thyrotoxicosis rarely have thrombophlebitis and pulmonary infarcts." *loc. cit.;* p. 620

34. "Hypernephroma flicks off many emboli that go through the lungs—one does not have to see snowballs—and into the bones. The bones may be loaded with metastases that do not show in the x-ray films." *lic. cit.;* p. 625

35. ". . . diffuse osteoporosis is a familiar picture in multiple myeloma and one often does not find any 'punched-out' areas." *loc. cit.;* p. 626

36. "It is not an uncommon sequence for signs of phlebitis in the legs subsequently to develop in patients with clear-cut evidence of pulmonary infarction." *loc. cit.;* p. 736

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*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. — Andrew M. Babey, M. D.

THE PRESIDENT'S COLUMN

The Goose that Laid the Golden Egg

By Celso C. Stapp, M.D., El Paso

Everyone knows that no one chokes the goose that laid the golden egg to get more golden eggs. Also, no one can correct the "choking" by taking a negative attitude saying the choking of the poor goose cannot be prevented.

A comparison can be drawn between the Golden Goose and our present tax situation. The tax payer is certainly laying the golden egg in this good country of ours. The tax payer, you and I, are certainly being hard put these days; and I think that most of us were rather painfully "cooked" on the fifteenth of April.

Wartime Taxes

With the continuance of the wartime taxes the incentive to produce more is rapidly disappearing, and everyone is putting more effort into hunting more deductions than into production.

Being negative about the problem has certainly not straightened out the problem. Let us take a more positive and constructive stand on straightening out this dilemma.

In a recent series of articles in one of our local newspapers great lengths were gone into to show how wives could help their husbands live longer. It was noted that nothing was mentioned about the tax situation and how much worry it has caused the American male, and I am sure the female also.

Depreciated Dollar

Our national taxes are now taking a disproportionate amount of the productive dollar, so that the only thing that can happen is that the dollar will continue to depreciate as has been the case for the past twenty years. Let us study the situation that would occur if only 25 per cent maximum income tax and a maximum of 10 per cent excise tax existed.

Then there would be more money to spend and more money to invest. Employment and wages would increase and there would be more people with more money to tax. Wages would gain their proper proportion of the dollar and thus be more stable. Management and capital would also gain their proportionate amount, giving profit incentive; and investments would increase along with markets, giving a boost in tax volume.

Most important of all though would be that the dollar would stabilize. As the dollar depreciates the government has been taking an even greater proportion of the dollar thus aggravating the situation and making incentive even less.

Giveaways

One other point to be noted is that we have been giving away a heavy proportion of our economy to other countries with nothing in return. This has been done under many varied pretexts. Some of this money has been given away in true charity and good samaritan effort and has met with the approval of most Americans.

A large amount has been given away to try and buy friendship. Friends who have been bought historically and factually have been of no help, and in fact buying friends has begotten hate. Let us be more realistic about our giveaway dollar and not try to support the world. Let us be a part of the world we live in and not its master.

Reductions Asked

The American public has asked for a reduction in the budget and a reduction in the taxes by writing their representatives, which is the proper and democratic process of government. All that we have gotten is a threat postal service will be reduced and other domestic programs cut. Granted, there are many domestic programs that should be cut, and certainly we are for economy in any programs.

We can also name some domestic programs in being that should be abolished and some proposed that would make the tax situation even worse, but there is even more chance of economy in the foreign giveaway program.

Write Your Congressman

Let us continue to write our representatives in government about the tax and budget in a positive manner giving our views on how we feel that it can be cut. This is the only way that we, as the people of America, can change the course of our destiny.

Ours is the only country in the world in which the government is truly by and for the people. If we don't speak and write how we feel and what we want, the government will continue to tax and spend.

Let us not choke the goose that laid the golden egg. For a choked goose will surely end a cooked goose.

MEETINGS

New Mexico Medical Society to Meet in Santa Fe May 15 - 18

Santa Fe, New Mexico, always a charming city and particularly at its best in the Springtime, will host the annual meeting of the New Mexico Medical Society May 15 through 18.

Officers are Dr. Stuart W. Adler, Albuquerque, N. M., President; Dr. Samuel R. Ziegler, Espanola, President-Elect; Dr. James C. Sedgwick, Las Cruces, Vice-President; and Dr. Lewis M. Overton, Albuquerque, Secretary-Treasurer.

Convention headquarters will be in the La Fonda Hotel with registration beginning at 9 a. m. May 15 in the Fireplace Lounge. Scientific sessions will be in the St. Francis Auditorium in the Art Gallery of the Museum of New Mexico. Also meeting there will be the House of Delegates at 1:30 p. m. May 14 and 8:30 a. m. May 15. Scientific exhibits will be located in the North Gallery of the Museum of New Mexico, with technical exhibits in the Santa Fe and Coronado Rooms of the La Fonda Hotel. The registration fee will be $20 for members and guests. Auxiliary members, nurses, medical students, residents and interns may register without fee.

Guest speakers will be as follows:

LAUREN V. ACKERMAN, M.D., Professor of Surgical Pathology and Pathology, Washington University School of Medicine, St. Louis, Missouri.

PHILIP HODES, M.D., Professor of Radiology, University of Pennsylvania School of Medicine, Philadelphia, Penn.

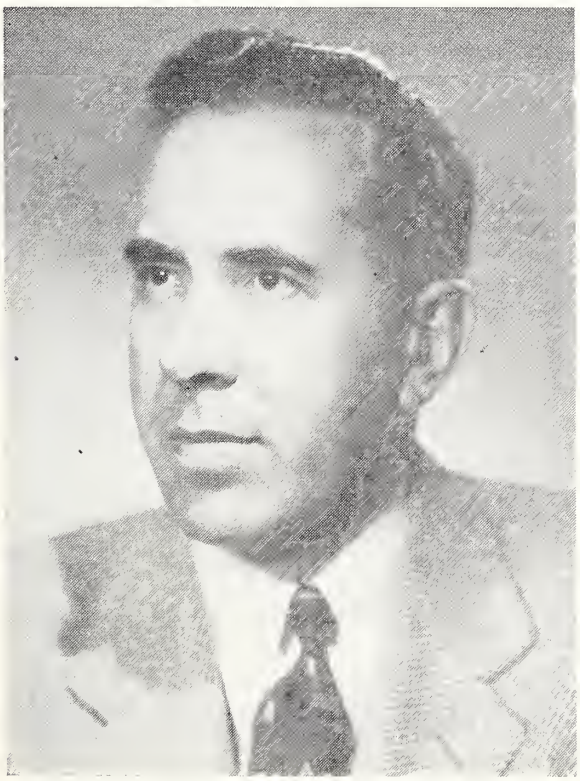
WILLIAM P. LONGMIRE, M.D., Professor of Surgery, University of California at Los Angeles School of Medicine, Los Angeles, California.

I. ARTHUR MIRSKY, M.D., Professor and Chairman of the Department of Clinical Sciences, University of Pittsburgh School of Medicine, Pittsburgh, Penn.

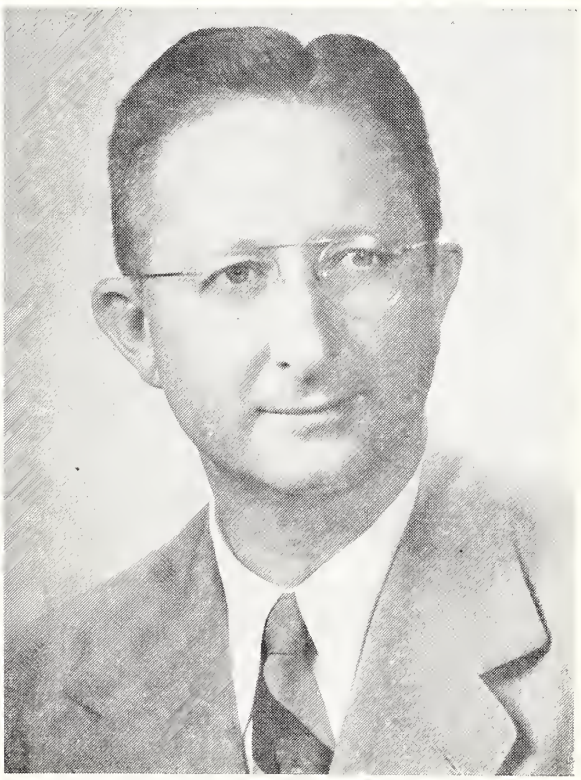
I. SNAPPER, M.D., Director of Medical Education, Beth-El Hospital, State University College of Medicine at Brooklyn, Brooklyn, N.Y.

THEODORE C. PANOS, M.D., Professor of Pediatrics, University of Texas Medical School, Galveston, Texas.

JAMES R. WILLSON, M.D., Professor and Chairman of the Department of Obstetrics & Gynecology, Temple University School of Medicine, Philadelphia, Penn.



Dr. Lauren V. Ackerman



Dr. Philip J. Hodes

SCIENTIFIC PROGRAM

Dr. William P. Longmire

Wednesday Afternoon — May 15.

Session Chairman - Stuart W. Adler, M.D., President, New Mexico Medical Society.

1:30 P.M.

Invocation: Reverend Henry F. Seaman, Church of the Holy Faith, Santa Fe.

Welcome: Leo T. Murphy, Mayor, Santa Fe.

Greetings: R. C. Derbyshire, M.D., President, Santa Fe County Medical Society.

Inaugural Address: Samuel R. Ziegler, M.D., President-Elect, New Mexico Medical Society.
"This Changing Environment".

2:15 - 3:15 P.M.

"Lupus Erythematosis" — I. Snapper, M.D.

3:15 - 3:45 P.M.

Intermission

3:45 - 4:45 P.M.

Clinical Pathological Conference.

7:00 P.M.

Stag Smoker and Buffet for Physicians and Exhibitors, La Posada.

Dinner for the Ladies — Bishop's Lodge.

Thursday Morning — May 16

Session Chairman: Lewis M. Overton, M.D. Secretary-Treasurer, New Mexico Medical Society.

8:00 - 9:00 A.M.

Movies

9:00 - 10:00 A.M.

"The Indiscriminate Use of Contrast Media".
Philip Hodes, M.D.

10:00 - 10:30 A.M.

Intermission

10:30 - 11:30 A.M.

"The Role of Insulinase and Insulinase Inhibitors in the Etiology and Treatment of Diabetes Mellitus".
I. Arthur Mirsky, M.D.

11:30 A.M. - 12:30 P.M.

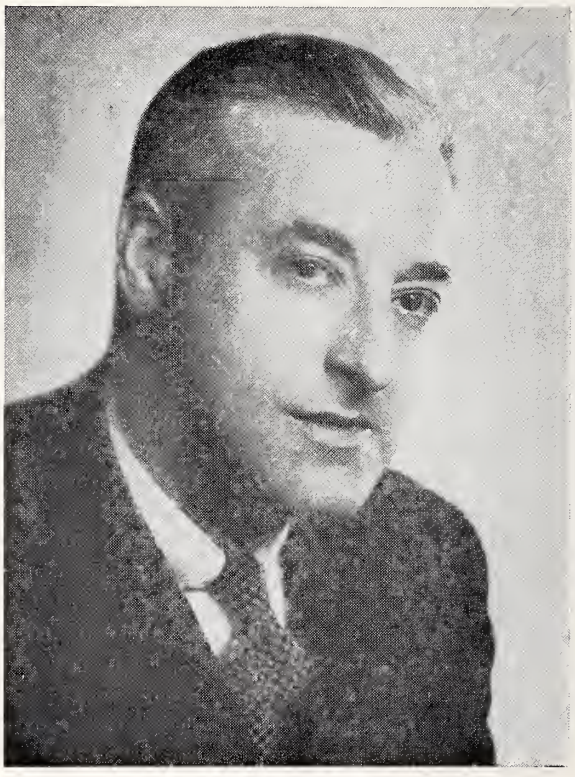
"Aids in the Diagnosis of Tubal Pregnancy".
James R. Willson, M.D.

12:30 - 2:00 P.M.

Organization Luncheons

Thursday Afternoon — May 16

Session Chairman: James C. Sedgwick, M.D. Vice-President, New Mexico Medical Society.



Dr. I. A. Mirsky

2:00 - 3:30 P.M.
Panel Discussion
Subject: "Gastrointestinal Bleeding"
Moderator: Philip Hodes, M.D.
Participants: Doctors Ackerman, Longmire, Mirsky, Panos and Snapper.

3:30 - 4:00 P.M.
Intermission

4:00 - 5:00 P.M.
Clinical Pathological Conference

7:00 P.M.
Cocktails and Dinner Dance — La Fonda
Obtain Tickets at Reservation Desk,
$7.50 per person.
(Formal Dress Optional)

Friday Morning — May 17.

Session Chairman: R. C. Derbyshire, M.D.
President, Santa Fe County Medical Society.

8:00 - 9:00 A.M.
Movies

9:00 - 10:00 A.M.
"Practical Problems in Surgical Pathology"
Lauren Ackerman, M.D.

10:00 - 10:30 A.M.
Visit Exhibits.

Dr. T. C. Panos

Dr. I. Snapper

10:30 - 11:30 A.M.
"The Nephrotic Syndrome"
Theodore C. Panos, M.D.

11:30 A.M. - 12:30 P.M.
"The Management of Diverticulitis of the Colon"
William P. Longmire, M.D.

12:30 - 2:00 P.M.
Organization Luncheons

Friday Afternoon — May 17

Session Chairman: Samuel R. Ziegler, M.D.
President-elect, New Mexico Medical Society.

2:00 - 3:30 P.M.
Panel Discussion
Subject: "Complications of Diabetes Mellitus"
Moderator: Isadore Snapper, M.D.
Participants: Doctors Longmire, Mirsky, Panos and Willson.

ORGANIZATION LUNCHEONS

New Mexico Obstetrical and Gynecological Society — Thursday, May 16, 12:30 P.M., New Mexican Room, La Fonda.
New Mexico Orthopedic Society — Thursday, May 16, 12:30 P.M., La Posada.
New Mexico Pediatrics Society — Friday, May 17, 12:30 P.M., La Posada.

Dr. James R. Willson

Association of Radiologists and Pathologists—Friday, May 17, 12:30 P.M., New Mexican Room, La Fonda.

Trudeau Society — Friday, May 17, 12:30 P.M., La Posada.

American College of Surgeons—Organizational Meeting—Thursday, May 16, 12:30 P.M., La Posada.

The New Mexico Heart Association will hold a scientific meeting in Santa Fe, May 17 - 18, 1957, at St. Francis Auditorium (Art Museum).

Program

Friday - May 17

8:00 P.M.
"The Artificial Kidney"
W. J. Kolff, M.D., Research Division, Cleveland Clinics.

Saturday - May 18

9:00 A.M.
Symposium on Coronary Artery Disease.

2:00 P.M.
Symposium on the Artificial Heart.
Guests: Denton A. Cooley, M.D., Baylor University.
W. J. Kolff, M.D.
Three others to be announced.

New Mexico Ophthalmological Society to Meet in Santa Fe

The annual meeting of the New Mexico Ophthalmological Society will be held in Santa Fe, May 11 and 12, 1957.

Guest speaker will be Dr. Jerome W. Bettman, Associate Clinical Professor of Ophthalmology (Surgery) at Stanford University. Subjects to be discussed are as follows: Complications of Cataract Extraction — Handling of Complicated Cataract; Differential Diagnosis of Dark Lesions of Posterior Fundus; Aphakic Refraction and Use of High Power Lenses; Congenital Glaucoma, Diagnosis — Treatment; Experimental Studies — 'Ocular' Vasodilators; and Surgery of Trauma and Intraocular Foreign Bodies.

ORIGINAL ARTICLES

Prevention and Treatment of Blood Transfusion Reactions (Concluded)*†

By Marvin J. Friedenberg, M.D.**
Former Intern, New England Center Hospital, Boston

Incompatible Blood Transfusion

Human errors, either technical, clerical, or administrative, are responsible at present for the majority of incompatible transfusions, with rare instances of isoimmunization causing most of the other reactions.[21,52,110]

Red Blood Cells. Any or all of the signs and symptoms of a hemolytic transfusion reaction may be absent following the infusion of incompatible blood.[10,111] Clinical reactions may vary in severity from so slight as to be overlooked to rapidly fatal. However, they usually occur with sufficient intensity and distinction to make the diagnosis suspect, if not absolute.

The first symptoms usually appear during[112] or immediately following[1] the completion of transfusion. There is a more or less constant sequence or pattern of development in the clinical manifestations of an incompatible transfusion.[112]

Occasionally, immediate circulatory collapse producing the signs and symptoms associated with shock may occur, the prognosis being extremely poor if this is the case.[21,52]

More commonly, however, the reaction is less lethal,[21,52,112] the first symptom being a chill which may be violent[1,32] and may last from a few to 45 minutes.[52] This may be accompanied by a fever[21,32] as high as 104°F,[10,43] usually reaching a peak in 1-2 hours and dropping to pretransfusion levels within 4-8 hours.[52]

Substernal Pain

Substernal pain or a sense of precordial oppression or constriction may then develop, followed by a feeling of fullness in the head, headache, and a tingling sensation in the hands and feet.[1,10,32,52,112,113]

Pain in the lumbar region[10,21,52,112] bilaterally, which may be perceived also in the groins and radiating down the legs, commonly occurs next. This may be followed by flushing of the face, distention of neck veins, and the development of anxiety and restlessness.[10,52,112]

Cough with shortness of breath,[112] cyanosis[52] and rapid, shallow breathing[1] may then occur, followed by nausea,[10,32] vomiting,[10,32,112] and collapse[112] or prostration.[1]

The latter is characterized by all of the manifestations of the shock state, including tachycardia[10] with a rapid, thready pulse[1] and hypotension[10,52] with a fall in the systolic blood pressure.[1]

It has been stated that the reaction resulting from the transfusion of incompatible blood may be very similar to that following the infusion of contaminated blood, but in the former instance shock and orthostatic hypotension are not such outstanding features of the reaction.[32]

Hemoglobinemia[10] and hemoglobinuria[10,21] may then precede a state of partial or complete urinary suppression,[1,10,21,112] often accompanied by jaundice.[1,112]

Renal Failure

The stage of renal failure may be characterized by the development of stupor,[52,112] edema, convulsions, coma, and even death[32,112] in uremia.[1] A burning pain in the vein above the transfusion needle[10] and muscle cramps[52] may also be felt.

The shortened survival of incompatible red cells after their infusion makes it doubtful that a recipient will receive much benefit from a transfusion resulting in a reaction,[114] the more severe reactions probably being associated with a 50 per cent less effective increase in the recipient's hemoglobin concentration.[115]

The primary signs and symptoms enumerated among the above effects are usually delineated from the manifestations that occur secondarily as a result of or in association with renal failure. When a reaction is characterized by the development of primary manifestations only and then to a relatively mild degree, it may be termed a "minor" one,[116] 25 per cent of incompatible reactions being of this nature. They may be mistaken for pyrogenic reactions.[52]

Hemolytic Transfusion

The remaining 75 per cent of hemolytic transfusion reactions are complicated by hemoglobinemia, hemoglobinuria, and usually renal failure. These statistics are based on a report[52] of 37 incompatible blood transfusions, 28 of which precipitated a major

*This is the last of three sections of this article.
**At present Resident in Medicine, Grace-New Haven Hospital, New Haven, Conn.
†This article published by permission of the Tufts-New England Medical Center Bulletin.

reaction, 2 of these patients dying in shock, 2 developing no sequelae, and 24 (or 65 per cent of the total) developing acute renal failure.

In other words 26 out of 28 or 92 per cent of those who developed hemoglobinuria and survived the immediate reaction subsequently developed renal failure. It has been estimated elsewhere,[32] however, that less than 50 per cent of patients undergoing a hemolytic transfusion reaction develop acute renal failure.

Clinical Course

The clinical course of patients with acute renal failure has been divided into three phases[113,117,118]: the shock phase, the phase of renal insufficiency, and the recovery phase. The first, or shock, phase is of short duration, the characteristic hypotension lasting no longer than a few hours, unless it is complicated by previous blood loss.[52]

Death does not usually occur during this phase,[1] which is encountered to varying degrees in 55 per cent of those experiencing a major reaction complicated by renal failure.[52]

Second Phase

The second, or renal insufficiency, phase rarely becomes manifest before 12 hours after the transfusion is begun[1] but usually develops within 24 hours and is characterized by oliguria with fixation of the specific gravity at 1.010 (or occasionally complete anuria), azotemia, and plasma electrolyte changes.[52]

This phase is usually ended within 5-12 days of its onset by a profuse diuresis of from 3-12 liters of urine per day,[52] containing progressively decreasing quantities of albumin, casts, and red and white blood cells.

It is claimed[112] that the casts are one of the last abnormalities to disappear during the recovery phase. The extent and duration of the oliguria is the most accurate method of clinically evaluating the severity of renal failure.[52,112]

The azotemia, which persists until death or recovery, may reach a height of 50-100 mg per cent of blood urea within 24 hours and a plateau of 200-500 mg per cent in 5-9 days, but is of no importance in estimating the degree of renal failure.[52,112]

The plasma electrolyte changes that occur include the accumulation of organic acids, sulfate, and phosphate, resulting after about 5 days in the development of acidosis with a decreased carbon dioxide combining power of plasma.[1,52]

Also decreased are the Na+ and Cl− concentrations of plasma, occurring through a shift of these ions intracellularly, a dilution of them extracellularly by excessive fluid intake, or a loss of them into urine or feces.[52] This loss of the Na+ and Cl− ions is aggravated, of course, by vomiting, diarrhea or ex-excessive sweating.

Recovery Phase

The third, or recovery, phase is characterized by the profuse Na+, Cl−, and K+-rich diuresis mentioned and a 1-6 month (often 3-4 week) convalescent stage ending in the complete return of renal function to its pretransfusion state.[52] The clinical course of the patient correlates well with the morphologic changes observed in the renal parenchyma, from the tubular degeneration and focal necrosis observed during the initial days of the reaction through the stages of progressive and finally complete regeneration.[52]

The Hemorrhagic Syndrome

There are numerous reports[8,52,111,116,119-123] in the literature commenting on the hemorrhagic tendency which may develop following the transfusion of incompatible blood. This complication usually manifests itself by profuse, persistent oozing of blood from any site in which the integrity of vascular walls has been interrupted either prior to or during the course of a surgical procedure.

Bleeding may occur from the site of a needle or venipuncture in the skin, either internal or external operative wounds, mucous membrane of the gastrointestinal tract, including the gums.[52] The most exasperating feature of this bleeding tendency is its extreme intractability.

Four Circumstances

It has been noted[119] that four circumstances are invariably present in association with this hemorrhagic syndrome. First, the reaction is precipitated by the transfusion of incompatible blood.

Secondly, the infusion of a relatively large volume, at least 250 cc, of incompatible blood is usually required to produce the reaction.[52,119]

Thirdly, a fresh surgical wound is usually present which permits gross observation of the bleeding. Finally, evidence of hemolysis[119] and renal failure[52] is usually present, indicating that a major reaction has occurred.

The hemorrhagic syndrome developed either during or shortly after the completion of the transfusion in 25 per cent of 37 patients receiving infusions of incompatible blood, one out of the nine patients dying.[52]

The greater the area of body dissected, the greater is the chance that exsanguinating hemorrhage will occur.[119]

It is warned[119] that the bleeding of this syndrome should not be confused with either the "spontaneous thrombocytopenia" which may occur during operation or the "bleeding of cyclopropane anesthesia."

The former is characterized by its response to splenectomy, as well as by bleeding of a brighter red color. Although progress is being made in this direction the exact cause of the hemorrhagic state is unknown at present.[52]

Diagnosis

The diagnosis of a hemolytic transfusion reaction is based upon accurate laboratory tests in addition to careful clinical observation for the characteristic signs and symptoms previously described.

Since nearly all fatal transfusion reactions become clinically manifest within the first five minutes of infusion of the incompatible blood, it is mandatory for a qualified person to be at the recipient's bedside at least during this crucial period.[10] Others[112] advise that a trained individual should observe the infusion from beginning to end.

The presence of hemolysis, of course, provides an excellent clue as to the nature of a transfusion reaction. A minimum of 10 mg of free hemoglobin per 100 cc of plasma is generally necessary before the characteristic wine-red color imparted to the plasma is grossly visible following sedimentation of the remaining cells.[8]

Three methods of blood collection in testing for hemoglobinemia have been described. After the application of a tourniquet, one technique involves the centrifugation of blood collected directly into a dry test tube from a dry needle (no syringe) which has been inserted into a vain.

Another method involves the centrifugation of citrated blood collected via a needle and syringe previously moistened with saline and a third technique calls for the withdrawal of the blood in an oiled syringe.[32] If the serum after any one of these tests is pink, the presence of hemolysis is indicated.

Dark Brown Color

Also characteristic of a hemolytic transfusion reaction is the presence of hemoglobin in the urine, which imparts to it a dark brown, almost black, color.[32]

Once an incompatible transfusion reaction is suspected or proven, immediate microscopic urinalysis should be performed and repeated at frequent intervals.

In addition, calculation of the fluid intake and output, with catheterization if necessary, should be made; blood chemistry determinations should be obtained including urea and nonprotein nitrogens, CO_2 combining power, icteric index, and chloride and protein levels as indicated.[112]

Meanwhile, the offending donor blood from the bottle (not the pilot tube) should be re-identified with respect to the ABO and D antigens and a fresh sample of the recipient's blood should be retyped with respect to these systems and recross-matched with the donor's blood.[10]

If these tests confirm the original type and cross-match tests, the life history of the suspect donor blood should be reviewed completely from its collection to infusion.[10] Particular attention should be paid to the detection of partially destroyed red cells in the sediment of the bottled blood, which may have been present in the banked blood prior to the transfusion.[10]

The presence of partial destruction of the red cells may not always be reflected in the color of the supernatant[124] and abnormal blood unwittingly may have been given. Also, the Coombs test should be applied to the recipient's blood to detect any unusual agglutinins which may be present.[10]

Prophylaxis

It has been stated that "all fatal hemolytic reactions caused by blood group incompatibility are absolutely avoidable."[125] The general unavailability of typing sera capable of identifying many of the less antigenic factors makes it impossible for all practical purposes to prevent the development of *sensitization* to these factors in recipients of blood transfusions.[125]

However, once sensitization of significant degree has occurred, the utilization of a sensitive cross-match test should eliminate the threat of a serious *reaction* by ensuring that only compatible blood is employed in future transfusions.[125]

Prophylaxis involves meticulous attention to five general points in the selection, preparation, and administration of blood.

They include efficient and qualified personnel operating in a well organized system, proper selection of the donor, careful ABO and Rh typing, adequate cross-matching studies, and finally the utilization of specialized techniques and the performance of certain unusual procedures when indicated.

Personnel

It has become increasingly apparent that the one factor seemingly most amenable to correction, namely the occurrence of clerical inaccuracies and administrative mistakes, is responsible for the majority of reactions due to incompatible blood transfusions.[38]

Typing or cross-matching errors may result in a hemolytic transfusion reaction which may be fatal[125] Improper labeling of bottles and failure to read labels accurately, insufficient identification of patients, especially those with similar names, undue haste, personnel poorly trained with regard to their obligations and responsibilities and unfamiliar with their duties in the particular routine of the blood bank, an inadequately organized blood transfusion service, and a host of similar failings contribute significantly to the frequency of incompatible transfusions.[10,38,110]

A frequent turnover of transfusion service personnel and a multiplicity of personnel involved in handling a given transfusion also seem to increase the incidence of incompatible transfusions.[52]

Selection of Donor

There is an increased risk thrust upon a female recipient of a blood transfusion, if her husband is the

donor.[40,125] She may have been sensitized during previous pregnancies to antigenic substances lacking in her red cells but present in her husband's and inherited from him by their offspring. The antibodies produced in the female by the passage of these factors across the placental barrier may then precipitate a hemolytic reaction upon the subsequent infusion into her of her husband's blood. Also, the transfusion itself could act as the sensitizing event, causing the development of erythroblastosis fetalis during subsequent pregnancies.

ABO and Rh Type

The common denominator of the many varieties of blood typing techniques is the presence or absence of agglutination of red blood cells by various typing reagents.[10]

The latter are antisera containing antibodies which may be obtained from human and animal sources and are distributed by different manufacturers.[10]

Each manufacturer outlines exact instructions for the proper use of the particular reagent he dispenses, including the specification of precise conditions of pH and temperature[10] under which it should be used.

Each product is specially designed to detect a particular antigen, although many different antigens are, of course, inevitably present on the surface of the red cells to be typed.

Unless the instructions for use of the antisera are meticulously followed, the presence of substances other than those which the reagent is designed to detect will interfere with the test.[10]

Red Cells

Red cells are typed for the presence or absence of A, B, and D antigens, thus providing information concerning the identification of the cells with respect to the ABO and Rh systems, which, of course, are the systems most frequently involved in clinically significant transfusion reactions.

The major typing test consists of admixing the proposed recipients cells (antigen) individually with the three antisera (anti-A, anti-B, and anti-D antibody) commercially provided and then observing for agglutination. This classifies the recipient's cells into one of eight possible categories or blood types:

	anti-A	anti-B	anti-D	Type
#1	—	—	—	0 Rh neg.
#2	+	—	—	A Rh neg.
#3	—	+	—	B Rh neg.
#4	+	+	—	AB Rh neg.
#5	—	—	+	0 Rh pos.
#6	+	—	+	A Rh pos.
#7	—	+	+	B Rh pos.
#8	+	+	+	AB Rh pos.

+ indicates agglutination present
— indicates agglutination absent

It is recommended[10] that the blood type obtained by the above procedure be checked by performing a "back typing test" designed to detect the naturally occurring anti-A and/or anti-B antibodies universally present in O, A, or B individuals. The test consists of mixing the proposed recipient's *serum* (antibody) with red cells of known groups (antigen).

Since it is inconceivable that an individual could possess antibodies in his serum to an antigen present on his red cells, his blood type may be determined, in effect, by determining the nature of the naturally occurring anti-A and anti-B antibodies in his blood stream.

This "back typing" procedure cannot, of course, be used to check the Rh type of the proposed recipient, because antibodies to the D antigen are not naturally ocurring and are present in an individual only through sensitization by previous transfusion or pregnancy.

Recommendation

Therefore, it is recommended that the Rh type of the individual be checked by repeating the usual Rh typing test with two modifications· namely, utilization of another typing technique and employment of Rh typing serum obtained from a different manufacturer.[10]

The incubation of cells and serum for proper grouping and cross-matching should take two hours under ordinary circumstances and at least 15 minutes in an emergency, but never 5 minutes as is sometimes the routine in busy laboratories.[4]

Finally, it is advised[10] that a Coombs test be performed on red cells that are apparently Rh negative after exposure to anti-D typing serum, because the presence of the D^u variant will be detected by this procedure.

Once compatibility with respect to the three major factors (A, B, and D) is thus assured, routine typing for the other clinically less significant factors becomes impractical,[126] reactions due to the latter being avoided for all practical purposes by accurate cross-matching tests.[71]

Cross-Match

Once the blood types of the proposed recipient and prospective donor are determined, it then becomes mandatory to cross-match the bloods involved to detect any incompatibilities resulting from the presence of blood group antibodies to any one of the factors not yet tested for.

Three separate and distinct cross-match tests are performed for each transfusion[126]: the *major,* in which recipient's serum and donor's cells are mixed to detect antibodies present in the recipient, if he be sensitized to some blood group substance present on the donor's cells; the *minor,* in which recipient's cells are mixed with donor's serum to detect antigens present on the cells of the recipient that may react with antibodies in the serum of the donor; and, finally, the major test for abnormal cold agglutinins in which

the recipient's serum is mixed with the donor's cells and placed in the refrigerator to detect reactions that may occur only at lower temperatures.

Many Techniques

Many techniques are available for the performance of the cross-match procedures, but none can compare in sensitivity to the Coombs test to which ultimate recourse is taken in challenging situations.[125,127]

It is capable of detecting blood which may be incompatible due to previous sensitization of the proposed recipient through pregnancy, as well as blood transfusion.[125] The Coombs antiglobulin test is performed by incubating the recipient's serum and the donor's cells and adding, after the proper wash, Coombs serum.

The presence of antibodies of any form in the recipient's serum that might be active against the donor's cells is indicated by the development of agglutination upon the addition of the Coombs serum.[52]

Coombs Test

It is recommended[38] that the Coombs or proteolytic enzyme test always be employed prior to administering Rh positive blood to an Rh negative recipient in order to detect previous sensitization to an Rh factor. The presence of antibodies such as anti-Fy^a, anti-K and anti-Jk^a can only be detected by the indirect Coombs test, and consequently the determination of immunization to these factors can only be made by means of this method.[10,128]

It is also recommended that the Coombs test, rather than the other agglutination tests, be employed on the mother's serum to detect the offending antibodies prior to the exchange transfusion of an erythroblastic infant. Ideally the indirect Coombs test should be performed on a mixture of the recipient's serum and donor's cells prior to all proposed transfusions and at least on all those patients who previously had been recipients of multiple transfusions.[128]

It must be remembered that theoretically a previous incompatible transfusion may remove most, if not all, of the recipient's circulating antibodies, leaving none to react with the donor's cells during the Coombs test and giving a falsely negative test result.[52]

Treatment

The treatment of an incompatible blood transfusion reaction[129,130] may be conveniently divided into three phases of therapy corresponding to the three phases of reaction already described. It must be emphasized, however, that treatment must be individualized, being directed toward the particular needs of each patient, and for the most part conservative.[52]

The first, or shock, phase of the reaction is best treated by immediately discontinuing the infusion and, if necessary, administering additional compatible blood transfusions, employing the indirect Coombs procedure for the primary cross-match of the donor's blood.[10,52]

This therapy should only be undertaken, however, after the patient's apprehension is allayed by appropriate sedation and reassurance and after the incompatibility responsible for the reaction has been identified.

In addition, strong efforts should be made to control any concomitant blood loss which may be contributing to the peripheral circulatory failure produced by the incompatible blood.[52]

Multiple Transfusions

Mulitple transfusions may be required to treat the shock and anemia characteristic of a severe reaction, an attempt being made to maintain the patient's hemoglobin concentration at no less than 10 gm.[52]

Although blood of the correct type may be given following an incompatible transfusion reaction it is necessary to keep a wary eye out for the presence of agglutinins to this type previously infused and being available to cause a reaction.

Because of this possibility, washed Group O cells resuspended in saline may be used or Witebsky's substances may be added to Group O blood of low anti-A and B titer.[7]

Hemorrhagic State

The hemorrhagic state may be an extremely pressing therapeutic problem during the first phase of an incompatible blood transfusion reaction.

The intravenous infusion of toluidine blue has been suggested as a therapeutic agent for this syndrome,[131] and it has been used with encouraging results in both dogs and humans.[52,119] This therapy has been found[119] to be particularly effective in the presence of elevated protamine titrations.

Since the hemorrhagic state is somewhat similar to the bleeding observed in certain known immunologic conditions, a therapeutic trial of ACTH has also been suggested in the management of this condition.[52]

Treatment of the second (renal insufficiency) and third (diuretic) stages of the incompatible blood transfusion reaction are of great importance, but cannot be included in this discussion.

Platelets. The observations thus far made seem to demonstrate that there are different platelet, as well as red blood cell, types, and that an immunologic thrombocytopenic blood factor probably exists which may be responsible for the development of isoimmunization to platelets as a consequence of either pregnancy or an "incompatible platelet" transfusion.[132]

Plasma. Recently, the infusion of sterile plasma was found[133] to be responsible for the production of

a transfusion reaction characterized by chills, fever, pains in various locations (head, abdomen), nausea, vomiting, intestinal hyperperistalsis (diarrhea), and cyanosis.

This phenomenon has been observed in patients with hemolytic diseases, terminal carcinoma, and paroxysmal nocturnal hemoglobinuria and is always followed by a hemolytic crisis.

It is suggested[134] that this may be nothing more than another instance of the nonspecific type of reaction found in anaphylactic and peptone shock, or following the intravenous administration of foreign proteins or incompatible blood, or following the injection of iron compounds in susceptible individuals, or during the hemolytic paroxysms of cold hemoglobinuria, favism, and blackwater fever.

Result of Embolism

It was postulated[134] that the reaction might be the result of embolism and the method by which the latter could produce this symptom complex was suggested. It was claimed that the blood became hypercoagulable and that an attempt at intravascular coagulation possibly occurred, this being based on the thrombocytopenia and decreased prothrombin activity and fibrinogen concentrations that were found. These phenomena were followed by an intense fibrinolytic activity in the plasma accompanied by the appearance of an unidentified anticoagulant.

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Clinical Note from Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

Carcinoid tumors are derived from chromaffin cells of the intestinal tract. Carcinoid tumors with metastases to the liver (presumably because of the production and release of serotonin [5-hydroxytryptamine] by the tumor) occasionally give rise to a characteristic syndrome.

The syndrome is manifest by peculiar cutaneous flushes and cyanosis, chronic diarrhea, respiratory distress, and valvular disease of the right heart (pulmonic stenosis and tricuspid insufficiency).

Hypotension occurs during the severe flushes. The diagnosis is confirmed by the finding of increased amounts of serotonin and five-hydroxyindole compounds in the blood.

There is no effective treatment for this disorder, but the prognosis is much better than in patients with hepatic metastases from other neoplasms.

Myxoma of the Left Atrium: Report of a Case

By Kurt Lekisch, M. D., Midland, Texas

Myxoma of the heart has been diagnosed before death only on rare occasions. The disorder is usually mistaken for mitral stenosis.

The patient, a 54 year old white homemaker, had a history of several previous illnesses which the author suspects may have coexisted with the malady that led to her death. On the basis of clinical, roentgenologic and electrocardiographic observation, a diagnosis of lymphatic spread of metastatic carcinoma throughout both lung fields, originating from adenocarcinoma of the right breast, was entertained.

Other possibilities were thought to be collagen disease or progressive subacute interstitial pulmonary fibrosis. No cardiac murmur could be heard even in the left lateral recumbent position. Low grade fever and anemia remained unexplained. The congestive failure was refractory to the usual therapy.

Autopsy Report

At autopsy the heart weighed 323.5 gm. The left atrium contained a lobulated grayish tumor mass measuring 5.5 cm. in length by 4 cm. in width by 1.2 cm. at the base. The base of the tumor was attached to the upper edge of the foramen ovale. Section from the tumor revealed heavy fibrosis with formation of cartilage and even some calcification. In these areas there was also evidence of old hemorrhage.

In the periphery, the tumor formed a loose network of elongated, spindle-shaped cells. Between these cells, there was matrix of homogenous metachromatic material suggesting the presence of large amounts of mucin.

The controversy among pathologists as to whether the myxoma is a true neoplasm or simply an organized thrombus was weighed. The author believes that this tumor arose from a definite location in the endocardium and had a characteristic gross and microscopic appearance of a true neoplasm.

Murmurs Absent

The absence of any murmurs suggested that the obstruction of blood flow in the left atrium occurred at the orifices of the pulmonary veins rather than at the mitral valve. The association of low grade fever and anemia with myxoma of the heart is an extremely interesting one and the possible explanation for the systemic reaction might be the presence of the tumor itself.

Neither conventional roentgenography nor electrocardiographic tracings have been helpful in establishing the diagnosis of atrial myxoma. Cardiac catheterization data from a report revealed the pulmonary capillary pressure to be elevated. However, intracavitary tumors have been diagnosed in life by means of angiocardiography.

Characteristic persistent filling defects in an atrium were noted in all cases. Recent advances in surgical technique and the use of hypothermia or heart-lung machine have made it possible to remove intracavitary tumors successfully.

Mechanical Interference

In the case under discussion, the symptoms and signs were thought to have resulted from mechanical interference with entrance of blood into the left heart and to back pressure in lungs and right heart. These findings were coupled with persistent progressive cardiac insufficiency, entirely unresponsive to treatment. Intracardiac tumor should have been suspected.

By review of the literature, angiocardiography was found a specific aid to diagnosis in such cases and is urgently advised since this type of tumor now can be successfully removed and represents one form of curable heart disease.

Post Office Box 852

Do Ovaries Cease to Function at the Menopause?

By Joseph B. Raddin, M. D., Phoenix

There is presently, and there has been for some years past, considerable discussion whether, during pelvic operations on a woman over forty years of age, she would or should not be castrated as a routine procedure.

An argument often given in favor of removal of normal ovaries is that since they have stopped, or soon will stop, functioning they are, nevertheless, potential hazards as the site of future carcinoma.

The removal of normal tissues and organs is seldom felt to be justified by hospital tissue committees and removal of normal ovaries should be no exception.

There is no doubt that carcinoma of the ovaries is more common after forty years of age. But is it common enough to warrant wholesale removal of grossly normal appearing ovaries as a routine procedure? Castration of women in their forties causes a great deal of ill health due to the hormone imbalance induced which is often not of short duration, nor mild, nor readily relieved by estrogen medication. Is this ill health adequate compensation for the extremely rare possibility of primary ovarian carcinoma?

There is considerable doubt that ovaries actually do cease entirely to function even, in some instances, many years following the onset of the amenorrhoea of the natural menopause. How can ovarian function at a low level be demonstrated?

Inexpensive Method

Lacking accurate assays for blood content of estradiol and progestin, and the doubtful clinical value of costly assay of their urine excretion compounds, an inexpensive, readily available method of assay may prove helpful. The Papancolaou method of staining vaginal and cervical tissue cells should be a reliable index of ovarian function and it is suggested as a convenient and inexpensive manner in which to study this problem.

During routine physical check-ups of women, it is an easy matter to take material for a "Pap" smear. Whether or not the staining and interpretation is performed by the examining physician, it is easy for the laboratory to express an opinion whether or not the cells show estrogen effect during the search for possible evidence of malignancy.

Younger Than Age

Physicians as well as men and women are aware that some women appear and act years younger than their actual age. It was thought there might be some correlation between the persistence of estradiol effect noted on the stained vaginal smear preparations in these youthful appearing women in their sixties. Similarly, there might well be some relation between lack of ovarian hormone effect as disclosed by vaginal smear staining in those women who appear older than their actual age justifies.

My preliminary impression is that, at least in these active, young-looking, menopausal women, there is considerable secretion of ovarian hormones although obviously at a level insufficient to induce menstruation. Removing the ovaries from such a woman could not avoid inducing annoying menopausal symptoms and ill health even though she is in her fifties or sixties at the time of operation. Such ill health following castration is a common clinical fact encountered in medical practice which these women do not enjoy.

Possible Contribution

It does not necessarily follow that in those women whose ovaries appear at operation to be atrophic, because there are no follicle cysts visible, that even these ovaries no longer contribute something worthwhile to that woman's health and well being. It seems preferable not to remove normal atrophic ovaries routinely when the opportunity presents itself, solely on the perhaps false assumption that such ovaries actually are completely non-functioning.

Castration of women in their forties, fifties and even sixties regularly induces a great deal of ill health resembling menopausal complaints. Need more proof be offered that menopausal ovaries do contribute importantly to a menopausal woman's enjoyment of abundant good health and sense of well being?

Another clinical fact should be considered. What is the actual incidence of carcinoma developing later in an ovary which appears free of any apparent pathology when examined at the time of operation? In my opinion, it is extremely low.

There is little factual data to support the proposition that normal ovaries should be removed from any woman at any age including those approaching the age of, actually in, or many years after the onset of a natural menopause. Before castration of menopausal women is generally accepted as a rational or justifiable routine operation, much more factual data should be accumulated to support the thesis that these ovaries are completely non-functioning and that their retention is actually a health hazard.

In my opinion, castration should not be a routine procedure in menopausal women or in women nearing the natural menopausal age.

15 E. Monroe St.

Management of Patient with Acute Renal Failure*

By Robert E. Johnston, Lt. Colonel, M. C., William Beaumont Army Hospital, El Paso

The management of acute renal failure requires exacting and constant teamwork between clinicians, the laboratory service and the nursing service. The principles of treatment are: Proper fluid control, accurate electrolyte balance, adequate caloric intake, prophylaxis against infection, and when necessary, removal of retention products by dialysis or lavage.

The most serious error in fluid balance is overhydration. The proper quantity of water required during the anuric phase varies from 500 to 1000 cc per 24 hours depending upon whose work one reads. However, the usual figure given is 700 to 800 cc plus that which is lost by vomiting, diarrhea and drainage.

Since most of these patients are seriously injured or are in the immediate post-operative period, the fluid must, of necessity, be given parenterally. Intravenous fluid is best given by constant drip of 10 to 40 per cent invert sugar through a polyethylene venous catheter.

Ten per cent invert sugar plus hyaluronidase supposedly can be given subcutaneously, when necessary, with little discomfort. If blood transfusion becomes necessary to maintain blood pressure it is best to use packed red cells or plasma expanders.

Dextran in water is the substance of preference since, when it is not excreted, it is metabolized to CO^2 and water.

If overhydration occurs with pulmonary edema and cardiac decompensation the following measures may be used: Venasection, administration of sodium sulfate 50 gram by mouth to cause diarrhea or vividialysis with hypertonic glucose.

Important Problems

In controlling electrolyte balance, the sodium and potassium levels are the most important problems. In general, sodium should not be administered during the anuric phase except when necessary to replace sodium loss or to combat severe acidosis.

However, during the diuretic phase large quantities of sodium are necessary to replace that lost in the urine. Three grams of sodium chloride for each 1000 cc of urine it the usual requirement.

Hyperkalemia, which may lead to cardiac arrest, is considered by most to be the usual cause of death in renal failure. Hypertonic IV glucose reduces loss of potassium from the cells. The simultaneous administration of dextrose and insulin will lower, at least for a short time, a high potassium.

One unit of insulin is given for every three grams of dextrose. Another temporary measure to antagonize the toxic myocardial effects of potassium is the addition of calcium gluconate in doses of 10 to 20 gm per 24 hrs. If these measures are unsuccessful vividialysis or cationic exchange resins will be necessary.

The carboxylic resin sodium salt (30 to 60 grams per day in divided doses) has been advocated by Kolff. This resin will exchange its sodium for potassium. The use of resins requires careful control of sodium uptake and withdrawal.

They are poorly tolerated orally and given rectally, they are less efficient. During the diuretic phase potassium losses requires replacement by IV potassium chloride or oral potassium gluconate.

Hypocalcemic Patients

Patients in uremia may become hypocalcemic. They may be treated with IV calcium gluconate. In addition, aluminum hydroxide may be given to prevent absorption of phosphorus.

During the anuric phase if the bicarbonate ion level drops to below 12 m. Eq. per liter this acidosis may be treated with 40 m. Eq. of sodium lactate or 6 grams of sodium bicarbonate per day. Dialysis will also relieve acidosis. During the diuretic phase, 40 to 120 m. Eq. of sodium lactate may be necessary to combat acidosis and compensate for urinary sodium loss.

Kolff strongly advocates a high caloric, low protein diet in renal insufficiency when it can be tolerated. He feels that this definitely reduces the development of hyperkalemia. Fat emulsions (Ediol, Lipomul, oral) are available to be given by mouth or gastric drip. Intravenous fat emulsion if and when available would be of considerable value.

Infections must be prevented or treated with antibiotics. Erythromycin is well tolerated. Streptomycin is best not used since excretion is interfered with in uremia thus causing a cumulative effect leading to vestibular damage.

When necessary, retention products may be removed by vividialysis. The artificial kidney is, by far, the best method. Usually five to six hours of dialysis is sufficient. Peritoneal lavage and intestinal lavage at times are both possible and effectual.

The patient in acute renal failure is not an easy one to manage. He requires considerable attention, thought and supervision and the battle is not won until recovery is complete.

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*From Symposium on Surgery in Acute Trauma delivered at William Beaumont Army Hospital, April 1956

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

February 21, 1957

F. P. Bornstein, M. D., Editor — Case No. 760

Presentation of case by Dr. John Verosky

History — Dr. Nathan Kleban

A Latin-American infant boy was admitted to this hospital on November 19, 1956 because of labored breathing and cyanosis.

The 21-year-old mother was said to have been anemic during her pregnancy, gave no history of rubella, was attended by a Juarez midwife at delivery. Respiration was spontaneous. Birth weight was not known. Cyanosis of lips and nail beds, which was more intense with crying, was noted the day after birth. Ability to suck was initially poor, later improved. Whether the child was offered or took three ounces of powdered milk every three hours was not clear.

Five days before admission cyanosis deepened, rate of respiration increased, choking and frothing at the mouth were described. The infant refused feedings, regurgitated what little it took. Oxygen was administered for two days at the Red Cross Hospital in Juarez. There were 10 loose stools during the day and night before admission. Quality of cry was not described.

There were no siblings. Family history was not recorded.

Physical Examination

The general and nutritional condition on admission was poor. Temperature was 98.6, subsequently fluctuated erratically between 94.0 and 103.0 F. Respiration was 48 in rate and was described as regular. Pulse rate was about 130, regular. Admission weight was five lbs. 5½ ounces, varied between five lbs. five ounces and five lbs. thirteen ounces while in the hospital. Intense cyanosis of skin and mucous membranes was present. Toes and fingers were clubbed. The neck was supple. Breath sounds were tubular. Rhonchi and crepitant rales detected. There was no chest deformity. Radial and femoral pulses were equal. The PMI was a xiphoid heave, not overactive. The first sound was split, maximal at the xiphoid. The second sound was loudest at the second left intercostal space. No murmur was heard. The liver was 2-4 cm. below the right costal margin. The anterior fontanel was open and depressed. Neurological findings were not remarkable.

Hospital Course:

Despite the administration of oxygen, digitalis, mercurial diuretics, tetracycline and supportive therapy there was no improvement in the baby's condition, which remained poor. Cyanosis seemed to be continuous, although the nurses' notes several times stated that it was present at intervals, and on December 5 there was a notation that cyanosis was not apparent, although there was a delay in replacing an empty oxygen tank. Stools were not remarkable. Feeding was by gastric tube during most of the hospital stay without apparent regurgitation. Pediatric and cardiac consultants participated in the infant's care. On the 19th hospital day respirations were labored with suprasternal and subcostal retraction, later Cheyne-Stokes in character; cyanosis was more profound; rales and liver size increased; the skin became cold and clammy. Death intervened on the 20th hospital day, December 7, 1956.

Laboratory:

Hemoglobin: 11.5, 14.5, 12.4, 10.0 gms.; Hematocrit: 38, 50, 45, 38 per cent; RBC 4,000,000; WBC: 34,200, 20,400, 14,600; Segs. 47, 51, 54; Stabs. 1, 4, 5; Juveniles 6, 1: Lymphs., 43, 40, 41: Monos. 3, 2: Eos. 1, 1.

Urinalysis: Straw, acid, S. G. QNS, albumin 2+, sugar 3+, acetone negative, WBC 5-10, P.P.D. No. 1 negative 48 hours. Methemoglobin negative.

X-ray: Chest film: Pneumonitis, right mid lung field. Findings consistent with pericarditis with effusion. A congenital lesion cannot be excluded.

Findings consistent with congenital heart disease... possibly tetralogy of Fallot.

Electrocardiograms (5) interpretation by cardiac consultant: No definite evidence of chamber enlargement; interpretation by pediatric consultant: Right ventricular, left and right atrial hypertrophy. Subepicardial ischemia over right ventricle.

X-Ray Discussion—Dr. Charles C. McVaugh

The original single anterior-posterior view of the chest on November 19 reveals considerable cardiac enlargement and an increased vascularity of both lung fields. There are also changes in the right chest

consistent with an inflammatory process. The liver appears somewhat enlarged.

Both lungs appear well expanded with no evidence of postpartum atelectasis. Radiographically we must consider a congenital heart lesion with a superimposed pneumonitis. Also to be considered at this examination is an acute cardiac dilatation or possible pericardial effusion.

Re-Examination

On November 21, re-examination of the chest reveals considerable decrease in the cardiac size with the cardiac silhouette approaching a more normal contour.

The pulmonary markings, especially in the right upper chest, are still increased over normal consistent with a pneumonitis.

The final radiographic examination available on the 27th of November reveals a further decrease in the cardiac size and the size and contour are now within normal limits for an infant of this age.

The lung fields reveal a uniform density which may be due in part to respiratory phase.

However, they are more suggestive of a widespread pneumonitis. The liver appears somewhat smaller than at the original examination.

Unfortunate

It is unfortunate that later radiographic examinations near the terminal stage of this illness are not available. However, in view of the return to normal of the cardiac size and contour it is unlikely we are dealing with a congenital heart lesion.

On the other hand persistent and progressive pulmonary changes indicate that we are dealing in all probability with an inflammatory process and that the cardiac enlargement observed on the original examination was due to an acute cardiac dilatation or possible pericardial effusion. The exact nature of the inflammatory process I cannot identify.

In conclusion, I feel that we are dealing primarily with an inflammatory disease and not a congenital heart lesion and that the cause of death was probably the result of this inflammatory process.

Clinical Discussion — Dr. John Verosky

We have, then, a two month old infant, cyanotic from birth, who developed a pneumonia and congestive failure and died. Our problem is to predict the anatomical malformations found at autopsy.

We must first decide whether the child had heart disease. Severe pulmonary disease can cause cyanosis, dyspnea, failure to gain; it can also cause abnormal cardiac findings, such as cardiac enlargement and abnormal electrocardiograms.

The syanosis since birth, long preceding the terminal episode of what appears to be a pneumonia, argues for a primary heart defect. We have the further advantage of a negative methemoglobin determination.

Finally, definite clubbing was present, reinforcing the parents' report of significant cyanosis from an early age.

Heart Disease

We conclude that this child has heart disease. Even without cyanosis, the chances are against acquired heart disease at this age, though of course myocarditis has occurred even in the newborn nursery.

Unless one accepts endocardial fibroelastosis as an acquired lesion — a perfectly defensible position — it seems most likely that this child has congenital heart disease.

A purulent pericarditis secondary to a pneumonia is similarly unlikely with the story of cyanosis since birth.

On physical examination, there was definite generalized cyanosis, not of the peripheral type seen in pneumonia or cardiac failure, but the marked degree seen with right to left shunts.

The degree of clubbing was striking even for this amount of cyanosis. This suggests that a relative anemia interfered with the manifestations of the true degree of the shunt.

Physiologic Depression

The physiologic depression of hemoglobin usually seen at two months of age may have combined with some anemia from infection to produce this anemia, with the added influence of undernutrition, seen here as in many cases of severe congenital heart disease.

Detectable pretibial edema is frequently absent in congestive failure in infants.

However a liver palpated only two cm. below the costal arch makes the presence of cardiac failure uncertain at the time of admission; later in the hospital stay the child gained weight and the liver became larger.

We commonly draw the line for normal livers in small infants at three cm. Left chest deformity is a common sign of long-standing right ventricular hypertrophy with right ventricular dilatation in the growing chest; it is often absent in severe concentric right ventricular hypertrophy such as in pulmonic stenosis and tetralogy, and much more apt to be present if there is dilatation of the right ventricle, such as in atrial septal defect.

No left chest prominence was seen in this child, but he had not grown. The point of maximal impulse is a xiphoid heave.

Right Ventricular Preponderance

This suggests right ventricular preponderance, and so is often found in the normal neonate. Though

not stated in the protocol, the first sound was poor in quality, suggesting myocardial dysfunction.

On the other hand, the second sound, louder on the left, was of at least fair quality, arguing residual pulmonic stenosis.

No murmurs were present. Of course, in a weak flabby heart, significant murmurs may be obscured. Further, there is at least one defect in which murmurs may regularly be absent in the neonatal period, namely, atrial septal defect.

However, in a cyanotic infant of two months of age, one is more apt to think of the most common right to left shunts without stenosis or septal defects, namely, complete transposition of the great vessels with intact septa, and coarctation or atresia of the aorta proximal to the insertion of the ductus.

This latter is not to be confused with the ordinary (so-called adult type) coarctation with its relative femoral hypertension.

Cardiac Enlargement

The chest X-rays show cardiac enlargement and increased pulmonary vasculature; so much is definite. We add, with more caution, that there is prominence of the right ventricle and right atrium, and that the waist of the heart is strikingly narrow.

This is suggestive of transposition, because in this condition the aorta and pulmonary artery tend to be more in a direct anterior-posterior line than normally.

However, in the lateral view, the waist is still narrow, which makes one think of the possibilities of the absence of one or other of the great vessels.

Protocol

The protocol points out a difference in opinion on the electro-cardiograms. Fundamentally, there are two points of view on electrocardiograms in children; the analytic and the statistical, neither of which is adequate by itself.

The analytic method dwells on the actual electrical background of the various deflections. The statistical method recognizes that we have very little experimental data to support theorizing in children, especially in congenital heart disease, when one does not know which ventricle is where.

The essence of the statistical approach is that one must interpret electrocardiograms in children against the background of growth and development.

For instance, this child shows an upright T in VI. This, statistically, is quite rare in normal infants between two weeks and one year of age, and usually represents pathologic right ventricular hypertrophy.

Observed Fact

I cannot tell you why this is so, only that it is the observed fact. Further evidence for right ventricular hypertrophy in this child is an S of 11 mm. in V6; An S wave exceeding 6 mm. in a normal child of two months is rare.

The electrocardiogram shows tall and peaked P waves in II, III, and aVr on various occasions; the P in I is occasionally flat-topped.

These suggest enlargement of both atria. With the possibility of pericarditis in the back of the mind, up to 3 mm. elevation of ST segments over the right ventricle makes one wonder about the sub-epicardial musculature.

A good Q in VI is absent; stastically, this is against aortic atresia.

Abnormal Findings

Thus far we have listed the abnormal findings in this child, occasionally being reminded of this or that malformation. We will now list the possibilities and weigh the evidence for the best choice with the information available.

Congenital heart disease can be divided into cyanotic and acyanotic types. The cyanotic types can be divided into those with right ventricular hypertrophy and those with left ventricular hypertrophy. Those with right ventricular hypertrophy can be divided into those with decreased and those with increased pulmonary vasculature. This child fits into the latter sub-group. There are seven of these to consider:

1. Transposition of the great vessels
2. Aortic atresia (and infantile coarctation)
3. Total anomalous pulmonary venous return
4. Eisenmenger's Disease
5. Single ventricle
6. True truncus arteriosus
7. Severe bizarre malformations.

Complex Venous Anomalies

The last one of these includes complex venous anomalies, cor biloculare, and so forth; we eliminate them because most of these children will usually die even sooner than two months, because most of them have all sorts of murmurs, and because if one of these is present we haven't much of a chance of identifying it antemortem without physiologic investigations.

Single ventricle is unlikely because most of these children do not do this poorly.

The true truncus with marked cyanosis is usually one without pulmonary arteries, with blood supply to the lungs via bronchial arteries springing from the descending aorta. These arteries are usually visible on X-ray, and usually generate a good continuous murmur. These children, too, usually do much better than this child.

Eisenmenger's Disease

Eisenmenger's disease only seldom gives this degree of difficulty and this much cyanosis in early childhood; a ventricular septal defect murmur is usually audible.

Total anomalous pulmonary venous return is more attractive, but, again, these usually do well for years, and a large atrial septal defect is usually present, with a good murmur.

Aortic atresia or infantile coarctation is very possible, because this is the age at which these children disintegrate, and because of the narrow waist of the heart.

Against the diagnosis are the absence of any difference in cyanosis between fingers and toes, and the absence of a good Q in VI; neither of these findings, however, are always present.

Transposition of Aorta

Transposition of the aorta is also very possible. With no murmur, we would have to assume that mixture of the blood occurred solely through a patent foramen ovale, a ductus arteriosus, and perhaps anomalous pulmonary veins.

Without a ductus, these children usually die within the first two weeks of life. With a ductus, it is common enough for closure of the ductus to begin, with increasing deterioration of the child, at about this age.

Sifting these probabilities, the two most promising malformations seem to be:

1. Transposition of the great vessels with intact septa.

2. Aortic atresia or coarctation proximal to a patent ductus. In addition, the child had a terminal pneumonia.

Some Comments

I would like to add a few comments upon the management of this child. He was given Similac and mercurials. Similac has a sodium concentration similar to breast milk, and both have only 1/3 the sodium content of ordinary cow's milk.

We have seen on several occasions infants with congenital heart disease, who did fairly well on breast and who rapidly gained weight and went into failure when placed on evaporated milk formulae.

We believe quite strongly in mercurials in cardiac failure in infants, and usually like doses more regularly and in larger amounts than that given here.

The combination of a true low sodium formula, such as Lanolac, plus mercurials in an infant can be exceedingly hazardous, without very careful control by frequent blood electrolyte determinations.

We therefore usually elect to give either Lanolac (which only the youngest infants will ordinarily accept, due to its lack of palatability) or mercurials, using a less severe sodium restriction.

Daily Body Weights

We pay a great deal of attention to daily body weights, and in this case a preterminal rise in body weight heralded the final disintegration. There was considerable evidence for digitalis effect in this child's serial electrocardiograms — ST segment and T wave changes, though the corrected QT interval remained essentially unaltered throughout his hospital course.

Of course we are frequently disappointed with digitalis in congenital heart disease, because increased myocardial efficiency cannot correct shunts and completely overcome the stress of superimposed pneumonia, but we think that it should usually be tried.

It might have been useful to have given this child intravenous iron in an attempt to stimulate rapid reticulocytosis, though response in the presence of superimposed infection is not likely to be striking.

No Fluoroscope

We did not fluoroscope this child, and perhaps should have, except that we felt that the additional evidence to be gained would be small, and the stress on the child definite, though also small.

We did not catheterize this child because of the poor shape he was in, and because we had no great hope that a surgically correctable lesion was present.

But this discussion is of more than academic interest; the time is nigh when young infants in at least similar predicaments may frequently be helped by surgery, so that attempts at antemortem diagnosis will be of ever-increasing importance.

Clinical Diagnosis: — Congenital Heart lesion.

Dr. Verosky's Diagnosis: 1. Transposition of the great vessels with intact septa; 2. Aortic atresia or coarctation proximal to a patent ductus.

Pathological Diagnosis: 1. Lipoid pneumonia; 2. Sub-arachnoid hemorrhage, due to birth injury.

Pathological Discussion — Dr. F. P. Bornstein:

On autopsy we found an emaciated male infant which weighed 2700 grams. Examination of the organs of the chest revealed that the heart was essentially normal.

The lungs had a peculiar reddish pale color. They felt heavy. The cut surface showed a solid pale yellowish-gray lung parenchyma. The lung tissue did not float in water.

This obviously represents some type of pneumonia.

On microscopic examination (Fig. 1) you can see very easily that this is a chronic pneumonitis of long standing. The most unusual feature of this pneumonitis is the number of foam cells which on special stains are positive for lipoid. (Figure 2.)

Question Arises

The question then arises, why was this child cyanotic since birth? This question was answered by examination of the brain which revealed a subarachnoid hemorrhage of some standing.

In trying to interpret the course of events in this case, we can come to the following conclusions: This child received a birth injury which produced cyanosis.

By the time it had come to the hospital a lipoid pneumonia started to develop which proved fatal.

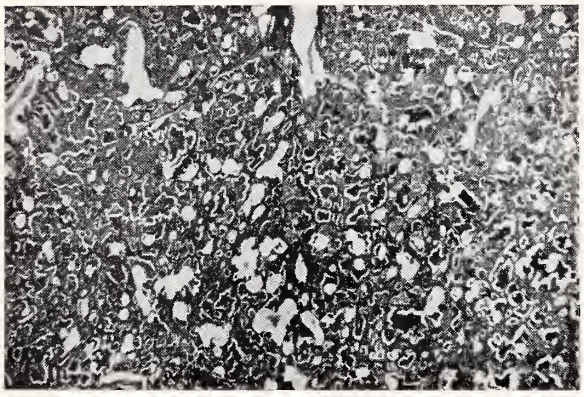

Figure I

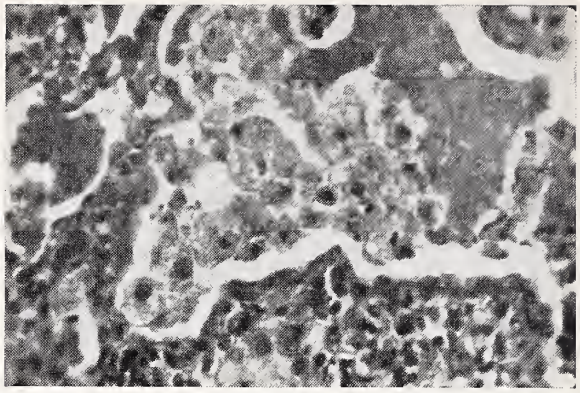

Figure II

A chemical examination of the lipoid substance which was amply present and even floated in the formalin fixed material, revealed it to be mineral oil.

Careful examination of the hospital records shows that mineral oil was not used on this infant either for nose drops or for greasing the catheter which was used for the tube feeding.

We therefore assume that the damage causing the lipoid pneumonia was produced before the child was admitted to the hospital.

CANCER — CIGARETTE SMOKING

Lung Cancer In Women

Wynder, E. L., et al., New England J. M. 255:1111, 1956

Three groups of women were studied. Group I consisted of women with epidermoid lung cancer. Group II was comprised of women with adenocarcinoma of the lung. Group III served as controls and consisted of women with tumors at sites other than the lung. There were more heavy smokers in Group I than in Groups II and III. After weighing the evidence the authors assert the "posit"* that cigarette smoking increases the risk of epidermoid lung cancer in women.

**The most probable hypothesis on the basis of the evidence presented.*

Sloan-Kettering Institute & National Institutes of Health.

Clinical Clippings, March, 1957.

"....To Work Effectively Together"

By Leo E. Hollister, M. D., Veterans
Administration Hospital
Palo Alto, California

. . . "One of the benefits from the introduction of tranquilizing drugs might be the development of a closer working relationship between psychiatrists and other physicians. Pharmacotherapy is as strange to most psychiatrists as it is familiar to most generalists. On the other hand, psychotherapy is as strange to most generalists as it is familiar to most psychiatrists. It now appears that a large segment of patients in the offices of both psychiatrists and generalists require both forms of treatment. The obvious solution is for psychiatrists and generalists to find a way to work effectively together.

Closer Relationship

"The first step in bringing about a closer relationship is for the generalist to learn more about psychiatry. The generalist frequently sees the potential psychiatric patient early in his disorder. To be able to determine which patient requires psychiatric treatment and which patient can be handled with "supportive psychotherapy often requires considerably more diagnostic acumen than is provided by the usual psychiatric training offered by medical schools. This matter is of some importance. The excessively tired, impotent middle aged man may be a more likely potential suicide than a case of male climacteric.

"A man with alcoholic gastritis might have doubts about his wife's fidelity which troubles him far more than indigestion — a trouble which he might attempt to solve by killing her. The young wife with every complaint in the book might be a candidate for a psychotic break upon the addition of a relatively small stress, such as the birth of a child or the transfer of her husband to a new city. Yet all these tragedies could possibly be prevented by early recognition of the psychiatric problem underlying the physical complaints. Clearly additional post-graduate training in psychiatry for generalists could yield high dividends.

Second Way

"A second way in which psychiatrists and generalists might be brought closer together would be to establish psychiatric units in local hospitals. The introduction of the tranquilizing drugs has made feasible the care of all but a few psychiatric patients in general hospitals. Psychiatrists would benefit by being brought from the isolation of private sanitaria and State Hospitals to a closer contact with the general medical community. Because some psychiatrists prefer not to be responsible for the administration of drugs to patients to whom they are giving psychotherapy, the collaboration of the generalist might be quite welcome. Having two doctors might be of some advantage to the patient, for he can vent his gripes about the psychotherapist to the generalist.

Third Way

"A third way whereby generalists and phychiatrists could work together effectively is in the supervision of maintenance therapy with tranquilizing drugs when the patient is discharged from psychiatric hospitals. More and more patients are each day being released from hospitals on continued treatment with the drug. They require the services of a medical man familiar with the use of these drugs, but not necessarily a psychiatrist. Many of these patients can be kept out of the hospital indefinitely with proper after-care. The well trained generalist is in a good position to carry out this function."

Medical Times October, 1956, Pages 1024-25. "Tranquilizing Drugs and the Generalist"

Coming Meetings

Texas Medical Association, 90th Annual Session, April 27 - May 1, Dallas. Headquarters, Baker and Adolphus Hotels. Headquarters, Women's Auxiliary, Statler Hilton Hotel.

Texas Orthopaedic Association, Annual Meeting, April 29, Adolphus Hotel, Dallas.

American Trudeau Society, May 6-9, Kansas City.

New Mexico Ophthalmology Society, Santa Fe, May 11 and 12.

American Gastroenterological Association Annual Meeting, Broadmoor Hotel, Colorado Springs, May 16.

New Mexico Medical Society, May 15, 16, 17, in La Fonda Hotel, Santa Fe.

District 8, American College of Obstetrics and Gynecology, Reno, Nevada, May 27 & 28.

American College of Chest Physicians, Annual Meeting, May 29 - June 2, Hotel Commodore, New York.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, in El Paso.

Texas Surgical Society, El Paso, April 7 & 8, 1958

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Q. What is the dosage of Marsilid?

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Q. What are the potential side effects of Marsilid?

A. Side effects due to Marsilid are reversible upon reduction of dosage or cessation of therapy. It may cause constipation, hyperreflexia, paresthesias, dizziness, postural hypotension, sweating, dryness of mouth, delay in starting micturition, and impotence.

Q. When is Marsilid contraindicated?

A. Marsilid is contraindicated in overactive, overstimulated or agitated patients. Marsilid therapy should be discontinued two days before the use of ether anesthesia. It should not be given together with cocaine or meperidine. In patients with impaired kidney function, Marsilid should be used cautiously to prevent accumulation. Marsilid is not recommended in epileptic patients.

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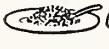
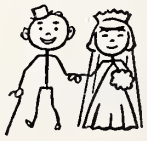
I, John Droe, was a bachelor I did my own cooking and ate only those things which pleased me most. 

One evening, I stopped at the butcher shop and bought four pork chops. 'Twas a veritable feast. But soon after I finished eating, the feast began to trouble me and trouble me and trouble me a common occurrence.

I hied myself to Dr. Jones who reached into his experience for some sound dietary advice and into his drawer for some Bilogen samples he had "Take two of these now with water for relief and here's a prescription for some to keep on hand in case you have this trouble again. But don't overload your digestive tract as you have been, and stay away from so many rich foods. Moderation in diet is what you need."

The Bilogen worked so well that I felt better before I got home I took Dr. Jones' advice and stayed away from rich foods as much as possible. But whenever I had some trouble, I found that Bilogen gave me the help I needed. In fact, I felt so much better that I even got married. 

John Droe

P. S. Why don't you write to Organon Inc., Orange, N. J., for a trial supply of Bilogen for one of your patients?

Southwestern MEDICINE

VOL. XXXVIII JUNE, 1957 No. 6

CURRENT THERAPY

Hormone Therapy in Functional Uterine Bleeding

By Gilbert Landis, M. D., El Paso

Functional uterine bleeding by definition excludes all bleeding due to a lesion of the uterus, or other organs influencing the uterus. It is commonly seen at the time of the menarche and the menopause. Functional uterine bleeding may be manifest as hypermenorrhea, polymenorrhea, or occasionally as menorrhagia. That is; excessively long menstruation, too frequent menstruation or excessively heavy menstruation. In general the menorrhagias are due to an organic lesion.

The excessive or prolonged flow that occurs at the time of the menarche is anovulatory in type. Estrogen is produced uninterruptedly until a bleeding level is reached, without the intercurrence of a corpus luteum, progesterone formation, and normal menstruation.

Plan of Therapy

The plan of therapy in the treatment of functional bleeding at the time of the menarche is as follows: First, a general physical examination is done to exclude hyperthyroidism or other constitutional illnesses which may cause this symptom. A rectal examination, or if possible, a one finger vaginal examination is always done to exclude an ovarian or uterine tumor.

The bleeding may be stopped using either estrogen to raise the estrogen level above the critical bleeding level; progesterone to convert the estrogenic endometrium to a secretory endometrium with complete sloughing; or testosterone to counter the influence of the endogenous estrogen. I prefer a combination of all three, using an aqueous suspension of estradiol 1.2 mgm., progesterone 25 mgm., and testosterone 25 mgm. per each cc. One cc is given I. M. daily for 3 to 5 days. The bleeding usually ceases promptly. However, in about 5 days after the last injection, estrogen withdrawal bleeding occurs. The patient should be warned to expect this. This bleeding usually ceases in 4 to 5 days.

Next Step

The next step in the therapy is to establish regular periods. Three weeks after the start of the withdrawal bleeding, progesterone 50 to 100 mgm. is given I.M. on two successive days. Within a week the patient should have a normal period, as the progesterone converts the proliferative endometrium to a normal secretory endometrium. The I.M. route is preferred because it is more constant. For the next two months the patient is cycled by giving progesterone on the twentieth and twenty-first day of the cycle. Should the patient fail to stop bleeding with the triple hormone, or bleed excessively, or prolonged after the progesterone, a diagnostic D & C should be done.

When bleeding occurs in the period between the menarche and the menopause it is difficult to decide whether the patient should be treated with hormones or whether a D & C should be done. In general, it is safe to try hormone therapy first. If it fails to regulate the patient, a D & C may be done.

Cyclic Therapy

When the patient complains of polymenorrhea, or irregularity of the periods, and careful examination has failed to disclose a constitutional disease, or a lesion of the uterus or adnexae, to account for the irregularity, cyclic therapy is used to reestablish normal cycles. Premarin 1.25 mgm. to 2.5 mgm. is given orally on each day, starting with the first day of the cycle. On the 21st and 22nd of the cycle progesterone 50 to 100 mgm. is given I.M. The therapy is repeated for two additional cycles, starting with the first day of bleeding. If breakthrough bleeding occurs while the patient is on Premarin the dose is doubled until the bleeding stops. The patient is maintained on this dose until the 20th day when progesterone is started. Usually after three months of cyclic therapy, the patient will resume a normal cycle.

Prolonged Bleeding

Excessive or prolonged bleeding at the time of the menopause should never be treated primarily with hormones. These patients should have a careful general physical examination as well as a pelvic examination, including Papanicolau smears of the cervix. If no lesion is detected, a D & C should be done both for hemostasis and also for diagnosis.

*Dr. Landis this month is substituting for Dr. Jack A. Bernard, regular conductor of this section.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

(Continued)

22. "It is not sufficiently widely realized that in tuberculous meningitis the level of the sugar in the C. S. F. may be normal: *The Lancet;* R. S. Illingworth, Sept. 29, 1956; p. 648.

Caustic Chemical Burns

23. "Probably the most serious and most acute of these is the group of caustic chemical burns which require prompt therapy. Here we repeatedly see that a physician on the spot at the time of the injury thinks back to his training as a Boy Scout rather than to his training in ophthalmology and wastes valuable time trying to decide whether the chemical burn was alkaline or acid. Of course the thing he should do without worrying about pH or chemical identification is to remove the irritant chemical immediately by copious irrigation of the eye with the first convenient irrigant available. More often than not it is tap water or lake water; if it happens to be in a hospital emergency room, it may be normal saline solution or the equivalent, but time taken looking for a neutralizing agent is really time wasted, particularly if it is an alkaline burn." *American Journal of Medicine,* October 1956, Dr. John M. McLean, p. 618.

24. "Acid burns are usually complete in their damage almost immediately, whereas alkaline burns, which penetrate the cornea so readily, are almost always worse the next day no matter how severe or how mild they may look at the time of injury. It is therefore important to follow carefully even a mild alkaline burn and it is impossible to assess the total amount of damage at the time of first aid." *Loc. cit.* p. 619.

Calcium Compounds

25. "When the chemical burn is caused by calcium compounds such as lime, which is a common one, the cornea is penetrated and calcium precipitates in the depths of the cornea after a short time and may cause considerable permanent damage." *Loc. cit.* p. 619.

26. "Most of the meddling surgical first aid to the eyeball does more harm than good." *Loc. cit.* p. 619.

27. "A cataract can be extracted by modern surgical means at any stage of its development and should be operated upon whenever the patient's visual handicap requires it, regardless of its state of anatomic development." *Loc. cit.* p. 621.

28. "By and large I think the general practitioner will find himself in trouble more often than not if he attempts to anesthetize the eye and dig an imbedded foreign body out of the cornea. There he will do better to patch the eye, perhaps put in an ointment, or if pain is severe, an anesthetic ointment, and refer the patient to someone properly equipped to remove it." *Loc. cit.* p. 622.

Bad Advice

29. "The most common bit of bad advice in strabismus is, do not bother having an eye doctor see the child because he may grow out of it. Very few children do." Dr. Dan M. Gordon, *American Journal of Medicine,* October 1956, p. 624.

30. "In adolescence, there is the accelerated maturation of the female as compared to the male, so that the 13-year-old or 14-year-old female seeks her companionship from the 16-year old or 17-year old males. Many parents worry because they fear their daughters are going to be exploited sexually by these "older men," whereas the girl is actually seeking companionship with people of her own development rather than her chronological age." Paul V. Lemkau, M. D., *The Journal of the American Medical Association,* October 27, 1956, page 856.

31. "This would justify the adage that it is not what you eat that causes the peptic ulcer but what is eating you." Lowell D. Snorf, M. D., *The Journal of the American Medical Association,* October 27, 1956, page 858.

Dangerous Master

32. "Radiology, which has taught us much and which has corrected many false beliefs, is nevertheless a dangerous master." A. H. Douthwaite, *British Medical Journal,* October 20, 1956, p. 896.

33. The commonest radiological pitfall is provoked by the radiologist's report. This to the majority of doctors and all laymen is infallible. It is noteworthy that the more skilled the radiologist the more cautious he is in stating his conclusions. He will report on what he sees, but he will state that his findings are so-an-so, and suggestive of this or that but nothing more. In the other and more heavily loaded scale are those who have embraced the specialty without adequate grounding in medicine and surgery. It is from these that we receive lengthy documents detailing normal and allegedly abnormal appearances, diagnoses sometimes correct and often utterly wrong, and worst of all, advice as to treatment." *Loc. cit.* p. 896.

(To be Continued)

"POINTERS"

From the Case Records of the Massachusetts General Hospital, 1953*

(Continued)

37. "I doubt very much if there is a real athletic heart." *loc. cit.;* p. 737

38. "Only about 10 per cent of the patients in this hospital with an established, diagnosed thrombophlebitis have emboli, and few of these have fatal emboli." *loc. cit.;* p. 783

39. "If metastases involve the abdominal para-aortic lymph nodes, they frequently pass through the diaphragm to involve lymph nodes in the mediastinum. For example, it may occur with cancer of the body of the pancreas, and one or two such patients have come into the hospital with a diagnosis of mediastinal lymphoma." *loc. cit.;* p. 783

Elderly People

40. ". . . subacute bacterial endocarditis. Elderly people often fool us with that disease because they may have little or no fever, they are debilitated and anemic, and they die in uremia. The course is so unlike that of this illness in younger people that we sometimes do not think of this possibility." *loc. cit.;* p. 821

41. "Current opinion about the ethiology of (endocarditic) glomerular lesions of this sort is against the traditional belief that they are due to showers of emboli swept off from a vegetation, and suggests a hypersensitivity state as a more likely explanation . . . About 50 per cent of patients with subacute bacterial endocarditis have glomerulitis of this type; however, relatively few, about 8 per cent, go on to die in renal failure." *loc. cit.;* p. 822

Lack of Pigmentation

42. "Patients with untreated panhypopituitarism are remarkable for their lack of pigmentation. Even moles are rare in such patients." *loc. cit.;* p. 857

43. "Even though the radiologist may think an ulcer is healed and is not able to demonstrate a crater, the lesion may be active and a source of bleeding." *loc. cit.;* p. 861

44. "About 90 per cent of small bowel obstructions are due to external hernia or post-operative adhesions. The remaining 10 per cent of cases are due to (1) gallstone ileus (chronic; air often found in bilary tree); (2) Intussusception (secondary to small bowel tumour or Meckel's diverticulum; (3) Congenital or postinflammatory bands; (4) Internal hernia (diaphragmatic, foramen of Winslow, paraduodenal, right or left); (5) Volvulus (secondary to congenital defect in fixation of the mesentery); (6) Anomalies of the yolk stalk omphalomesenteric duct and vessels (artery and Meckel's diverticulum)." A composite; p. 906

Appendicitis

45. ". . . appendicitis occasionally occurs in a part left behind at a previous appendectomy." p. 949

46. "What kind of tumors can produce gynecomastia? One has to consider three sources in such a patient—the pituitary and adrenal glands and the testes." *loc cit.;* p. 1033

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955.—Andrew M. Babey, M. D.

TOXICOLOGY

Clinitest-Produced Esophageal Stricture

Canby, J. P., J. Pediat. 50:68, 1957

The toxic properties of Clinitest tablets are not generally appreciated. The tablets contain copper sulfate, caustic soda, sodium bicarbonate, and citric acid. The author observed two children, each of whom had ingested one Clinitest tablet. In neither case did the attending physician recognize the nature of the potential damage to the esophagus. Several weeks later, both children developed esophageal stricture at the level of the aortic arch.

Brooke Army Hospital, Fort Sam Houston, Texas.
Clinical Clippings, March, 1957.

THE PRESIDENT'S COLUMN

Save Our Schools So They May Save Us

By Celso C. Stapp, M.D., El Paso

We, as Americans, have been taking our public schools for granted for the last century. Our free public school system and the idea of compulsory education didn't just happen. In fact, the turmoil that accompanied the development of the school system was one of the things that made the movement a great success. Unfortunately, as many things that we take for granted, there is much that is going wrong. The education of our youth is not the great concern that it was one hundred years ago. One of the greatest things about our school system was that it was directed from the local level. It, therefore, was free from the effects of politics on the national level. This helped maintain Democracy in the truest sense of the word. The great men of our history were presented as great Americans and not as political demagogues.

Control Schools Locally

At present reading we are in the great struggle for socialization. Certainly the schools have not escaped. Too many of us have not been willing to stand up and be counted for we know that to improve the school systems more taxes will have to be levied. There is a false feeling that if the Federal Government will do it we won't have to pay. It has been difficult to arouse the people into realizing that we can do it cheaper and better by maintaining local control.

Certainly in the last ten years the student load on our schools has increased about twenty five per cent. In the same period, the number of teachers has decreased ten per cent. The resultant deterioration should make every American insist that our schools be brought up to date.

Personal Experience

Recently, while speaking to a professor of English in one of our Colleges I learned that many colleges are teaching reading, writing and the basic grammar that should have been taught in grade school. Unfortunately, personal experience showed me this state of affairs to be true. Last month my son took an entrance examination for one of the finest prep schools in the state. I was told that he had seven per cent of normal in reading, thirty per cent of reading understanding and that he was deficient in grammar. In the same breath the registrar of the school told me that so were eighty per cent of the students from public schools making application to this school. He also told me that this was true of all the schools in the Southwest. This is what is happening to our children.

Write Your Congressmen

Nothing will come of this if you and I do not demand of our school boards and local governments that the schools be improved. We must write to our Senators and Representatives in Washington and tell them we want national taxes lowered. With lowered federal taxes we will have a chance to increase local taxes to support our schools. We must emphasize that we want to do this locally and do not want Federal Government control. Let us once again assert the courage that was our forebearers. We must stop these socialistic changes now. If we do not, our schools will be at the mercy of the federal political machines.

With the modern teaching techniques, and good teachers receiving adequate salaries, we can reestablish our schools to the high level they should be. By paying adequate salaries we can demand high qualifications of these teachers and attract the cream of our youth to the teaching profession, thereby alleviating the growing teacher shortage.

These things cannot be done without a trust in God and the pioneer determination that our founding fathers had in making this country great. Our schools are a basic bulwark against socialization and the political madmen. Let us defend them with our material means and our honor.

MEETINGS

Dr. Watkins of Dallas Elected President of Texas Orthopaedic Association

Dr. Margaret Watkins of Dallas was elected President of the Texas Orthopaedic Association at its annual meeting held in Dallas, Texas, April 29, in connection with the annual meeting of the Texas Medical Association.

Dr. Duncan McKeever of Houston was elected Vice-President and Dr. B. C. Halley, Jr., Dallas, was elected Secretary-Treasurer. Dr. John J. Hinchey of San Antonio is retiring President.

A total of 120 physicians attended the one-day meeting, which was held in the roof garden of the Adolphus Hotel for the morning and noon sessions, and in the Southwestern Medical School for the afternoon session.

Speakers

Speakers and their subjects were: Dr. Charles F. Gregory, Dallas, Chairman and Associate Professor of the Division of Orthopaedic Surgery in the University of Texas Southwestern Medical School, "Poliomyelitis in Dallas, 1956, and its Relation to the Salk Vaccine"; Dr. H. R. McCarroll, St. Louis, Assistant Professor of Clinical Orthopaedic Surgery in the Washington University School of Medicine, "Management of Congenital Dysplasia and Congenital Dislocation of the Hip in Infancy"; Dr. T. O. Shindler, Houston, "Tissue Culture Compression Studies on Bone Cells"; Dr. Preston H. Wade, New York City, Professor of Clinical Surgery at Cornell University Medical College, "Importance of Joint Motion in the Treatment of Fractures"; Dr. H. H. Brindley, Temple, Texas, "Chamley Type Arthroplasty of the Hip".

Dr. John J. Hinchey, San Antonio, President's Address; Dr. D. C. Hucherson, Houston, Clinical Associate Professor of Orthopaedic Surgery at Baylor University College of Medicine "Arthrodesis of the Shoulder—A New Method", and a panel on "Diagnostic and Therapeutic Orthopaedic Problems", with Dr. C. F. Gregory as moderator and panelists Dr. H. R. McCarroll, Dr. Louis W. Breck, El Paso, Dr. Henry C. McDonald, Fort Worth, and Dr. Duncan McKeever, Houston.

Dr. Margaret Watkins

The 1958 meeting will be held in Houston, Texas, on April 21.

New President

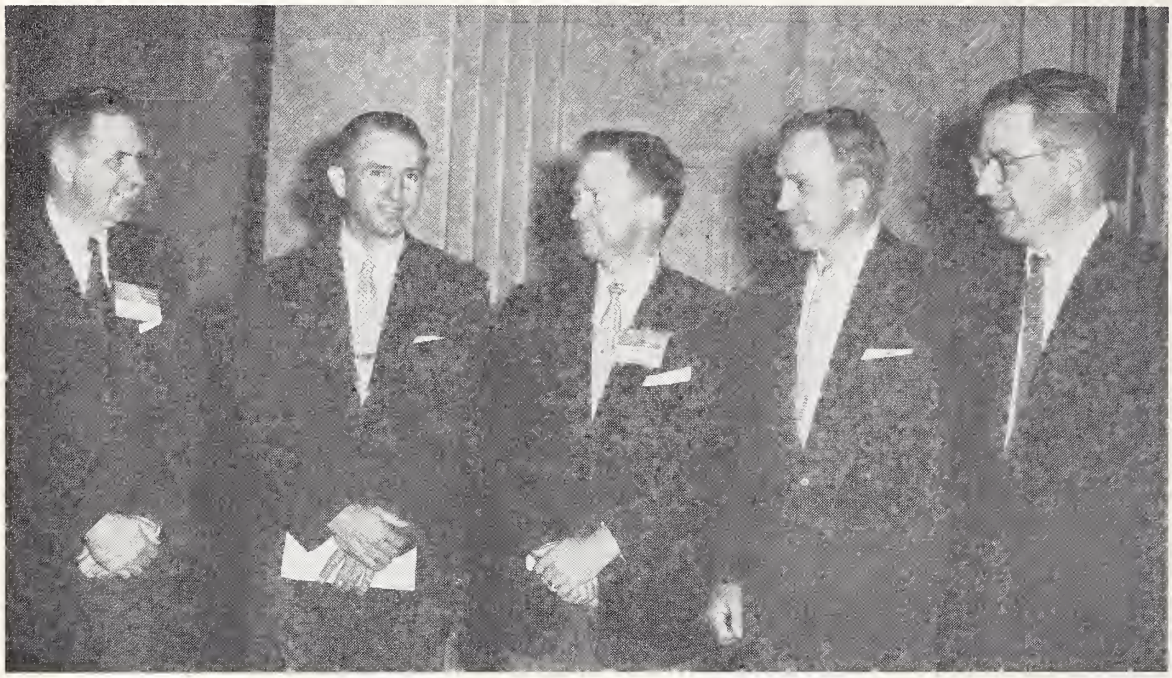
The new President, Dr. Watkins, was born in Dallas and received her B. A. from the University of Texas and M. D. from Baylor College of Medicine. She interned at Albany Hospital in New York, and took her residencies in the New Jersey Orthopaedic Hospital in Orange, N. J., Parkland Hospital of Dallas, and Baylor University Hospital in Dallas. Dr. Watkins began the private practice of Orthopaedic Surgery in 1942.

She has been secretary-treasurer of the Texas Orthopaedic Association since 1949.

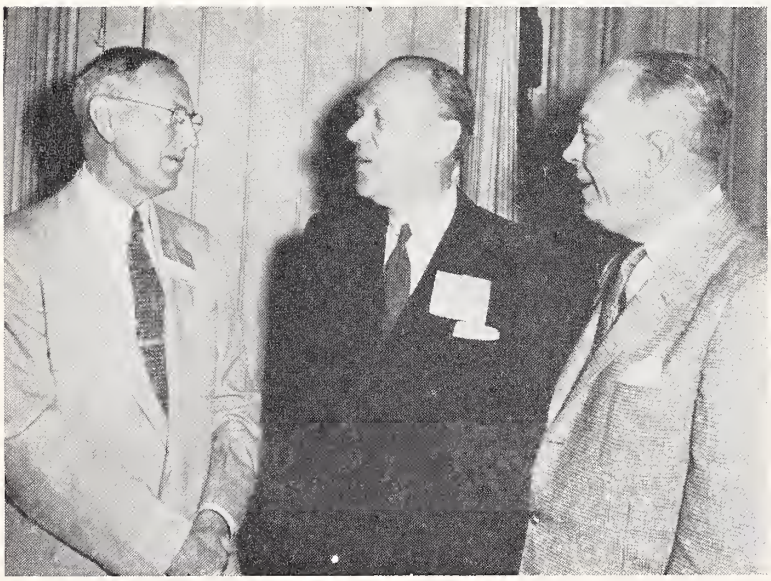
She is a member of the American Academy of Orthopaedic Surgeons, a Diplomate of the American Board of Orthopaedic Surgery, and a member of the American College of Surgeons, and the American Academy of Cerebral Palsy.

She is a member of the Board of the St. Matthews Foundation for Children, the Dallas Diocese; Consultant for the Moody State School for Cerebral Palsy in Galveston; Medical Director of the Dallas Society

for Crippled Children's Treatment Center; and a member of the Board of the Children's Development Center in Dallas. She is also Clinical Instructor for the Department of Orthopaedics in Southwestern Medical School and a member of the Mediation Committee of the Dallas County Medical Society.

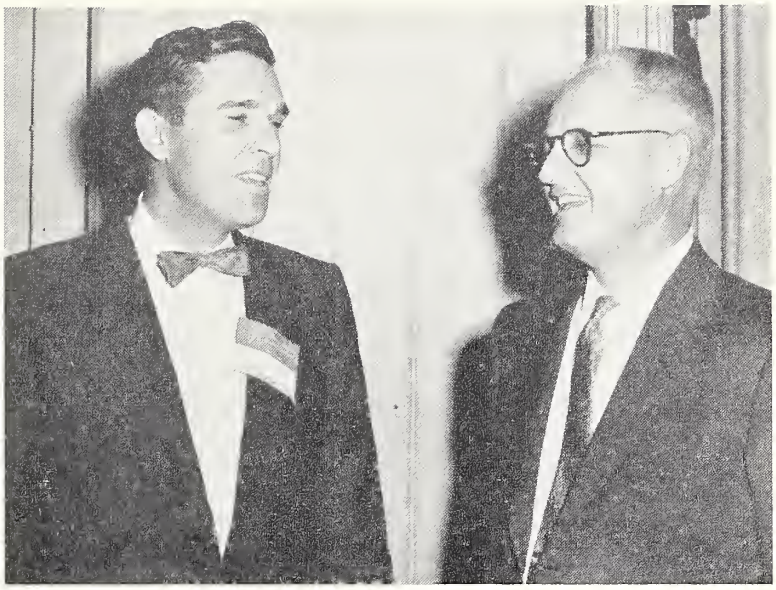


Left to right among speakers at the annual meeting of the Texas Orthopaedic Association in Dallas April 29 were Dr. John J. Hinchey, San Antonio, retiring President; Dr. H. R. McCarroll, St. Louis, Mo., Assistant Professor of Clinical Orthopaedic Surgery in the Washington University School of Medicine and President-Elect of the American Academy of Orthopaedic Surgeons; Dr. T. O. Shindler, Houston; Dr. H. H. Brindley, Temple, Texas; and Dr. Charles F. Gregory, Dallas, Chairman and Associate Professor of the Division of Orthopaedic Surgery in the University of Texas Southwestern Medical School.



Left to right are Dr. G. W. N. Eggers, Professor of Orthopaedic Surgery at the University of Texas Medical Branch at Galveston; Dr. Preston A. Wade, New York City, Professor of Clinical Surgery at Cornell University Medical College, one of the speakers; and Dr. John Mc Donald, Tulsa, Okla.

At right are Dr. Henry C. McDonald, (left,) Fort Worth, a member of the panel, and Dr. B. C. Halley, Jr. Dallas, new Secretary-Treasurer of the association.



Below (left to right) are Dr. D. C. Hutcherson, Houston, Clinical Associate Professor of Orthopaedic Surgery at Baylor University College of Medicine, one of the speakers; Dr. Louis W. Breck, El Paso, a member of the panel; Dr. McCarroll; and Dr. Duncan McKeever, Houston, new Vice-President of the Association and a member of the panel.

Southwestern New Mexico Medical Society Meets In Deming, N. M.

Left to right are new officers of the Southwestern New Mexico Medical Society, which held its regular meeting April 10 in Deming, N. M.: Dr. C. L. Harris, Las Cruces, N. M., Vice-President; Dr. William J. Hossley, Deming, N. M., retiring President; Dr. William B. Cantrell, Truth or Consequences, N. M., President, and Dr. T. H. Klunder, Lordsburg, N. M., Secretary-Treasurer.

Dr. James D. Bozzell of El Paso (left) was the principal speaker at the April meeting of the Southwestern New Mexico Medical Society in Deming, N. M. His subject was "Urological Problems in General Practice". With him is Dr. James C. Sedgwick, Las Cruces, who was vice-president of the New Mexico Medical Society for the year ending in May.

Left to right at the April meeting of the Southwestern New Mexico Medical Society in Deming were Mrs. James D. Bozzell, El Paso, wife of the guest-speaker; Mrs. T. H. Klunder, Lordsburg, N. M., Secretary-Treasurer of the Society's Auxiliary; Mrs. Paul A. Feil, Deming, N. M., Auxiliary Vice-President, and Mrs. H. S. Cohen, Lordsburg, President of the Auxiliary.

Clinical Note from Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

In the normal kidney maximum excretory capacity is reached when the urine volume reaches 2 cc/min (2800 cc/24 hrs). The maximum excretory capacity in a damaged kidney may be reached with urine volumes of less than 1 cc/min (1400 cc/24 hrs). In chronic renal insufficiency fluids should be pushed, but not beyond the ability of the kidney to excrete them. Weight gain and edema formation would indicate that this point had been reached.

American Fracture Association to Meet in El Paso September 30 - October 2

Plans for the annual meeting of the American Fracture Association, to be held in El Paso, Texas, September 30 to October 2, have been announced by Dr. Duncan C. McKeever of Houston, President, and Dr. W. Compere Basom of El Paso, a member of the Board of Governors, who is in charge of local arrangements for the meeting.

Approved for Credit

The meeting is approved by the American Academy of General Practice for Category II for 15 hours credit, and will be coordinated with a meeting of the El Paso Division of the University of Texas Postgraduate School of Medicine, of which Dr. Ralph H. Homan of El Paso is Director. The Postgraduate meeting is approved by the American Academy of General Practice for Category I for seven hours credit.

Following is a list of speakers and their subjects who will participate in the Postgraduate meeting: Dr. Duncan McKeever, Houston, "Mechanical Principles Involved in Fixation of Fractures"; Dr. William L. Waldrop, Oklahoma City, Okla., "External Fixation in Hand Surgery"; Dr. Roger Anderson, Seattle, Wash., "Management of Problem Fractures by Transfixion"; Dr. John B. Erich, Rochester, Minn., "Fractures of the Nasal and Malar Bones"; Dr. Robert T. McElvenny, Chicago, Ill., "Social and Psychological Significance of Scars"; Dr. Garrett Pipkin, Kansas City, Mo., "Fat Embolism". Other speakers will be Dr. I. W. Nachlas, Baltimore, Md., and Dr. Dana M. Street, Memphis, Tenn.

Reception

In connection with the Postgraduate meeting, a reception will be held at the Hotel Cortez from 6:30 to 7:30 p. m., September 29, by Dr. and Mrs. Ralph H. Homan and Dr. and Mrs. W. Compere Basom.

The American Fracture Association meeting will convene in the Hotel Cortez at 9 a. m. September 30. Registration will be held on the afternoon of September 29 and at 8 a. m. September 30.

Discussion Period

Each morning the meeting will start at 8 a. m. and the feature will be a discussion period for papers of the previous day. An opportunity will be given those attending to present problem cases with their illustration by the use of X-Rays.

In addition to the speakers listed above for the Postgraduate session, the following will take part in the American Fracture Association Program: Dr. S. Perry Rogers, El Paso; Dr. Charles B. Sadler, Amarillo, Texas; Dr. Morton H. Leonard, El Paso, Dr. Louis W. Breck, El Paso, Dr. Herbert E. Hipps, Waco, Texas, Dr. William C. Westen, Santa Fe, N. M., Dr. Philip T. Holland, Bloomington, Ind., Dr. George L. Dixon, Tucson, Arizona, Dr. Mario Palafox, El Paso, Dr. Zigmund W. Kosicki, El Paso, Dr. David M. Cameron, El Paso, Dr. Perry J. C. Byars, San Angelo, Tex., Dr. A. E. Luckett, El Paso, Dr. George W. Horton, Odessa, Tex., Dr. Leo Cooper, Gary, Ind., Dr. John S. Moore, Roswell, N. M., Dr. A. H. Dierh, St. Louis, Mo.

Roundtable Luncheons

There will be roundtable luncheons on September 30 at noon and a banquet dinner dance on October 1 in the Hotel Cortez. A tea will be given for the ladies on September 30.

Following conclusion of the American Fracture Association meeting, a chartered plane will be available for transportation to the Medical University at Guadalajara, Mexico, where a Postgraduate program will be presented. This trip is under the direction of Dr. McKeever, and arrangements can be made at the Hotel Cortez for attendance at this meeting.

PEDIATRICS

Adhesive Strapping For Umbilical Hernia In Infants

Haworth, J. C., British M. J. 2:1286, 1956

Although the common umbilical hernia usually disappears spontaneously, the condition often causes much anxiety among parents. Some physicians advocate mechanical reduction by means of adhesive tape while others believe that strapping is not only useless but also delays natural cure. From a controlled study of 100 babies with umbilical hernia it is evident that almost all small, untreated hernias disappear during the first year of life. The healing of large hernias was greatly facilitated by strapping.

Children's Hospital, Sheffield

Clinical Clippings, March, 1957.

Dr. Holt of El Paso New President of Texas Traumatic Surgical Society

Dr. Russell Holt of El Paso was elected President of the Texas Traumatic Surgical Society at its annual meeting in Dallas, April 27. The meeting was held in conjunction with annual meetings of the Texas Medical Association.

Dr. Holt presented a paper on the subject of "Prevention and Treatment of Lead Absorption". A discussion of Dr. Holt's subject was given by M. F. Mason, Ph. D., Dallas.

El Paso Physicians Present Papers at Dallas Meeting

El Paso physicians who presented papers at the annual meeting of the Texas Medical Association in Dallas, April 27 to May 1, were Dr. F. P. Bornstein, who spoke on "The El Paso County Program for the Medical Investigation of Sexual Offenses", and Dr. Celso C. Stapp, El Paso, President of the Southwestern Medical Association, who spoke on "Comparison of Rolicton and Mictine as Diuretics in Edema of Pregnancy".

Coming Meetings

First American Congress of Legal Medicine and Law-Science Problems to be Conducted by the Law-Science Institute of the University of Texas at the Hotel Morrison, Chicago, July 8 - 20.

Postgraduate Medical Assembly of South Texas, 23rd Annual Meeting, The Shamrock Hilton, Houston, July 15-17.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, in El Paso.

Texas Surgical Society, El Paso, April 7 & 8, 1958

Fifth International Congress of Internal Medicine, Sheraton Hotel, Philadelphia, April 24-26, 1958.

Medical Leaders Explain Trend Toward Salaried Practice

A desire for security and a desire to be part of a medical team are mainly responsible for the present trend toward salaried medical practice. That's the consensus of some fifty medical leaders queried by *Medical Economics*.

Nearly all these medical leaders (less than half of whom are themselves on salary) "explain the rise of salaried practice in terms of doctors' attitudes."

"To quote a privately practicing surgeon who's out of sympathy with the trend, 'today's young M. D. wants security. He wants leisure. And, unlike the doctor of the past, he isn't willing to work for these things. He wants to start out with them. So he takes a salaried post.'"

Adds the medical director of a big closed-panel plan: "Many of our best young men feel they can serve most effectively in teaching hospitals or in teamwork with salaried groups. Sure, they want security. But even more they want a better professional life."

Five Factors

"Besides these attitudes among doctors themselves, there appear to be at least five outside factors pushing them toward salaried practice.

"First, of course, is organized labor," the magazine reports. Some of the medical leaders it queried pointed out that more and more unions are willing to pay big money for their own medical programs. Says the head of one labor health center: "The time is already at hand when the family doctor in some industrial areas makes a better living on a union salary than in solo practice."

Another factor accounting for the spread of salaried practice lies in the increased number and influence of "private teaching hospitals with salaried staffs".

Medical Research

"The third outside factor is the great upsurge in medical research. Today's research-minded doctor is likely to be on the full-time payroll of a foundation, a university, or a drug company."

"Fourth is industrial medicine." The medical director of one doctor-employing company says, "There are more than 3,500 physicians on full-time salaries right now. Give us another ten years and we'll be one of the top five specialties."

"Finally, the Federal tax laws are a powerful force in favor of salaried practice." They take so much of what the high-paid private practitioner earns that many physicians say they would rather work on salary. Salaried jobs, they add, often provide for company pensions, thus eliminating doctors' worries about savings.

ORIGINAL ARTICLES

Surgical Treatment of the Painful Hip

By Rex L. Diveley, A. B., M. D.*
Kansas City

The patient who has been treated conservatively for a painful hip, and becomes a candidate for surgical relief of this condition, should be studied very thoroughly before any operative procedure is instituted.

The surgical treatment of the painful hip has too often been approached by enthusiasts who have instituted an operation almost routinely in order to prove the adequacy of the procedure. True, after a period of years, by trial and error, the favored surgery proves itself efficient for a percentage of cases and is accepted as the method of choice for selected pathological changes in the hip joint.

But too often without adequate study of our cases, or through lack of experience, we choose the wrong procedure for the relief of the pathological hip, and failure or disappointment results.

Review

You will pardon me, then, if I review the various types of painful hips in adults, and suggest the operative procedures which have given the best end results in our hands. We shall not include in our discussion the pathological or painful hip of childhood or the specific or tuberculous hip of adult life.

First, we must consider the early arthritic hip with resulting pain and stiffness. Generally this type of joint has undergone numerous methods of conservative manipulative and medical treatment. The X-ray plate in this variety of hip joint reveals a slight roughening of the femoral head, narrowing of the joint space, and occasional lipping of the acetabular rim. There is generally a definite contracture of the adductor muscles of the hip and a slight flexion contracture — nature's attempt to rest the joint in a relaxed position.

Preferred Treatment

We prefer to treat this type of hip surgically, but conservatively. If an adductor tenotomy and obturator neurectomy is performed, the adduction contracture can be largely overcome, and the pain will be materially relieved. In some cases it is advisable to add to this procedure a fasciotomy of the tensor fascia lata which will relax the flexion contracture if present.

This conservative operative procedure should be followed by carefully supervised physiotherapy to maintain abduction and extension of the hip joint.

It must be explained to the patient that this procedure is only a temporary measure, and in most cases more drastic treatment will be needed in the future if the arthritic process continues and the hip joint is further damaged.

In our series of cases, the results of this procedure have given marked relief to the patient over a period of from six months to three years. In a few cases the relief was permanent.

Next Type

The next type of hip we shall discuss is that due to a deformed femoral head from injury or disease of childhood or adolescence, which becomes painful as the individual reaches young or middle adulthood. Under this category we have slipped epiphysis, Perthes disease, arthritis, and epiphysitis.

The principal complaint in this type of hip joint is a limp and lack of motion due to a deformed femoral head attempting to function in an abnormal acetabulum. Pain and stiffness are constant symptoms.

Considering the age of the patient (20 to 45) the procedure which has proven most successful for the relief of this condition in our hands is the Smith-Peterson mold arthroplasty. Some surgeons still advise the fascial interposition arthroplasty in the middle aged patients. Our experience however has proved that the interposition of the Vitallium cup definitely decreases the demineralization and wear and tear changes of the femoral head, and the joint functions more normally than following a fascial arthroplasty. The stability with this procedure is unquestionably better.

Patients Evaluated

Patients upon whom this operation is contemplated should be evaluated very carefully as to their mental and general physical condition. The patient must be cooperative and willing to work for a successful end result. In many cases, the musculature about the hip is weak and atrophic and these patients must have the will to rebuild these structures and to withstand a certain amount of pain.

The young, non-obese patient with a will to accomplish is the best candidate for this type of hip reconstruction.

When the surgeon decides that a cup arthroplasty

*From the Dickson-Diveley Clinic, Kansas City, Missouri.
Read before the Texas Orthopaedic Association, Galveston.

should be performed, he must take the patient into his full confidence, explaining all the advantages, disadvantages, the work and cooperation which will be necessary on the part of the patient if success is to be achieved. Never oversell the procedure, but allow the patient to elect the operation, then you will be assured of his cooperation.

Three Phases

Any joint reconstructive operation should be considered under three phases, each one equally important:

1. Pre-operative indoctrination and preparation.
2. Skillful surgical-reconstructive procedure by the surgeon.
3. Carefully supervised aftercare and rehabilitation.

If these three most important phases of a joint reconstructive operation are carefully carried out, the end result should be successful.

A review of our series of cup arthroplasties reveals the following data:

Pre-operative diagnosis

Arthritis	43 per cent of cases
Trauma	18 per cent
Slipped Epiphysis	17 per cent
Septic Joint	4 per cent
All Others	18 per cent

The average age of the patients operated was 29 years.

The final results in this series can best be reflected by the answers to a questionnaire which has just been circulated.

Pain in Hip:	None	57 per cent
	Moderate	38 per cent
	Considerable	5 per cent
Range of Motion:	Excellent	33 per cent
	Fair	62 per cent
	Poor	5 per cent
Increase of Motion after operation:	Better	76 per cent
	About same	10 per cent
	Less	14 per cent
Work capabilities:	Does all work	72 per cent
	Some work	28 per cent
	None	0
Success of Operation:	Successful	67 per cent
	Fairly Successful	28 per cent
	Unsuccessful	5 per cent

The next category of painful hip in adulthood is due to a deformed head or neck of the femur, and/or acetabulum, from one of the following:

1. Disease — most often arthritis.
2. Injury with resulting deformity or non-union.
3. Degeneration — generally aseptic necrosis.

This age group starts at approximately forty-five years.

Probably the most popular surgical procedure for the treatment of the painful and deformed hip in all three of these categories is the replacement operation. This procedure — a "resection-reconstruction" operation — was introduced by Jean and Robert Judet in 1946, and has proven very popular with the American surgeons. As a matter of fact, in the elapsed three year period after its introduction into this country, some 500 American orthopaedic surgeons had operated and inserted approximately 8000 hip prostheses and had devised some 40 different types of prostheses.

The indications, the technique of the operation, and the type of prosthesis used has changed many times since its introduction.

Thorough Trial

The French (who introduced the procedure) as well as the British, are becoming much more conservative in the use of the operation. They have given the procedure a thorough trial for every known type of hip condition and can now categorize those pathological hips in which a replacement operation may give successful results. It might be well for the American surgeons to take heed and slow down in this period of acryllic delirium.

The procedure gives excellent results in well selected cases and in our hands has proved most beneficial in the following:

1. Fresh fractures of the head and high neck of the femur in the aged.
2. Non-union of fractures of the neck of the femur or aseptic necrosis of the head in patients past 60 to 65 or where the patient is prematurely senile or aged.

The hip replacement procedure allows the patient to become ambulatory early, is no more shocking than other hip operations, and the new type of hip reconstruction will generally outlast the expectancy of the patient. Just how long this type of hip reconstruction will last is still a debatable subject and the answer will only come with its usage over the years. The oldest cases as observed by the essayist in France have functioned efficiently approximately eight years.

A review of the cases of hip replacement performed and followed in our clinic reveal the following data:

Hip condition operated:	
Non-union neck of femur	41 per cent
Fresh fractures of hip (in aged)	26 per cent
Arthritis	19 per cent
Aseptic Necrosis	10 per cent
Others	4 per cent
The average age - 65.5 years.	
End results:	
Excellent	15 per cent
Good	37 per cent
Fair	28.3 per cent
Poor	5 per cent
Good but observed less than 6 months	13 per cent
Mortality	1.7 per cent

The displaced osteotomy procedure, whether the Putti, the McMurray, or the Blount type, is an excellent operation in selected cases, and will give a stable hip with a minimum of pain. We have used this operation most often in non-union of the neck of the femur and in conjunction with arthrodesis of the hip joint.

In the Putti or McMurray type of osteotomy where the cut line extends through the femur below the greater and above the lesser trochanter, the shaft is displaced medially, the leg is abducted, and the patient put up in a plaster spica until the osteotomy is healed. This new relationship of the shaft of the femur with the head and neck will give a better valgus position and will encourage the healing of a delayed or non-union of the femoral neck or take the stress off the hip joint and allow an ankylosis where the joint surfaces are unaffected by injury or disease.

We have obtained equivalent results and have materially cut down on the mortality by the use of the blade plate or the triflanged nail with lateral fixation bar to stabilize and fix the displaced osteotomy.

The patient selected for this type of operation may be younger, 35 to 65, and in a well chosen case will give a stable hip with a minimum amount of pain and some motion.

A review of our cases of sub-trochanteric osteotomy performed for delayed or non-union of the femoral neck reveal the following data:

Average age of patient - 64.5 years.	
Results:	
Excellent	20.4 per cent
Good	36.4 per cent
Fair	32 per cent
Failure	4.5 per cent
Unable to follow	4.5 per cent
Mortality	2.2 per cent

Fusion of the hip should be reserved for the patient who will require a stable and painfree hip which will withstand hard work. The middle aged patient is the best candidate for this operation, as they will adapt themselves to a stiff hip and learn to use it. However, the healthy older patient who can withstand the prolonged convalescence could be considered for this procedure.

There are many types of intra- and extra-articular fusion procedures. The operation which has proved the most successful in our clinic is the internal fixation method, whether intra- or extra-articular. We generally perform a subtrochanteric osteotomy in conjunction with the ankylosing procedure.

If the hip is partially fixed in a malposition either by disease or injury, an erasion is performed at the hip joint. The femur and leg are then brought into the proper position for ankylosis. The hip joint is nailed or fixed with a long triflanged nail which extends high into the ilium. A subtrochanteric osteotomy is performed, the shaft is displaced medially and fixed to the trochanter and neck by a bar or plate which has been preshaped to the correct position and fixed to the shaft with screws and to the nail head with a set screw. If this type of internal fixation is used, the patient may be dressed in balanced traction until union of the osteotomy has progressed, then a walking plaster spica to the knee can be applied for ambulation and mobilization of the knee, until ankylosis of the hip joint is complete.

A review of our cases operated for ankylosis of the hip joint with or without subtrochanteric osteotomy gives the following data:

Average age of patients - 50 years.	
Condition for which ankylosis was performed:	
Arthritis	58 per cent
Traumatic	21 per cent
Aseptic Necrosis	9 per cent
All Others	12 per cent
Intra-articular	65 per cent
Blind fixation	35 per cent
Subtrochanteric osteotomy	43 per cent
No osteotomy	57 per cent
Results:	
Excellent	40 per cent
Good	30 per cent
Fair	15 per cent
Poor	9 per cent
Unable to follow	6 per cent

Reconstruction operations of the hip such as advised by Whitman, Brackett, and Colonna have been carried out for years by some surgeons with varying success.

Acetabuloplasty was advised by Smith-Peterson for certain painful hips where there was an overgrowth of the acetabular rim, but was very soon replaced with the cup arthroplasty procedure. However, the acetabuloplasty is still useful in conjunction with arthroplasty where there are overhanging edges of the acetabulum.

In conclusion then, may I sound a word of caution that each case of painful hip is a problem unto itself and deserves thorough study and thought, before the application of any surgical procedure.

If the surgical procedure is carefully selected to fit the individual case, and if the operation is carefully planned and executed, and if the post-operative care and rehabilitation thoroughly supervised, the results should be most gratifying to patient and surgeon.

Wounds of the Perineum, Rectum and Buttocks*

By John W. White, Lt. Colonel, M. C., Chief, General Surgery Service,
William Beaumont Army Hospital, El Paso

In any discussion of wounds of the perineum, rectum and buttocks, it is impossible to keep from reiterating points that have been brought out by others participating in this symposium. The anatomical relationship of the perineum, rectum and buttocks must be thoroughly understood prior to any description of wounds of this area, and especially before any attempt at treatment of wounds of this region is undertaken.

In cases with multiple wounds, the perineum, buttocks and rectum may be easily overlooked in a cursory examination, and as a result, patients may develop overwhelming infections or may exsanguinate. Any examination is inadequate without careful inspection of the groins, the perineum and a rectal examination.

Cases have been reported where a soldier has been shot while in a kneeling position and died without external evidence of wound. Autopsy in this case revealed the bullet or missile had entered the anus and lodged in the body cavity. A rectal examination would have shown blood on the examining finger in this case.

Proctoscopic Examination

Should doubt exist as to whether a patient has sustained an injury to the anus or rectum, after digital examination, a proctoscopic examination is in order.

In wounds of the perineum or buttocks with an associated hematoma, one must presume there is an injury to the urethra or bladder, the treatment of which will be discussed in a later paper.

X-ray examination of these patients should include the pelvis and the hip joints to rule out involvement as well as the possibility of fragments of bone involving other structures in the pelvis. The treatment of injuries to the hip joints will be discussed by the Orthopedic Service.

Wounds of this area must be handled, with the same principles as in any other region, with adequate exposure, debridement and restoration of the wounded parts to as nearly normal anatomic and physiologic relationship as possible.

Adequate Debridement

Infection in this area is likely to be extensive and overwhelming if adequate debridement is not undertaken, since there are several closed spaces which can be contaminated from fecal spillage from the rectum. To better understand this, one must become acquainted with the anatomy of this area, but to attempt a comprehensive review now is impossible with the limitation of time.

Should infection or hemorrhage spread from the rectum at the level of the levators, it follows along the fascia propia, derived from the transversalis fascia, to point:

1. Along the iliac crest.
2. Through Petit's triangle.
3. In the lumbar region below the kidneys.
4. Along the sacrum or coccyx, and
5. Occasionally into the buttocks below the pyriformis.

The muscles and fascial attachments subdivide the area into an ischiorectal fossa and a true pelvirectal space which are so separated that, unless there is destruction or perforation of the fascial layers, the infections of these spaces will not penetrate the other.

The union of the transverse perinei muscles with Colles' fascia and the triangular ligament forms the posterior edge of the urogenital triangle, which is tough, and prevents the posterior spread of urinary extravasation.

Bladder Anterior

In general, the bladder lies immediately anterior to the rectum with the seminal vesicles and the prostate separated from the rectum only by the transversalis fascia and the dense investment of the prostate by the deep fascia. Immediately adjacent, but lateral to the rectum lie the ureters, and a little farther out, the internal iliac (hypogastric) vessels, where they emerge through the pelvis with the sciatic nerves.

The hypogastric artery passes anterior to the sacroiliac joint, giving off the gluteal vessels, which leave the pelvis with the superior gluteal nerves just above the pyriformis muscle, dividing into superficial and deep branches.

Since this is a large trunk, it frequently is the source of hemorrhage in a gluteal wound. The two terminal branches of the hypogastric artery, the sciatic artery and the internal pudic artery may be the source of hemorrhage. Both of these vessels pass through the sacrosciatic foramen. The sciatic nerve also emerges from the sacrosciatic foramen beneath the pyriformis and eventually lies external to the artery.

*From Symposium on Surgery in Acute Trauma delivered at William Beaumont Army Hospital, April 1956.

Treatment

The treatment of wounds of the perineum, rectum and buttocks follows the same principles of treatment as any traumatic wound. Primarily, the control of hemorrhage is instituted to prevent shock or to treat shock. It becomes necessary to reemphasize the need for knowledge of the regional anatomy in order to control hemorrhage without damaging the adjacent nerves.

Adequate debridement is necessary to prevent infection as in any other wound, but it is more important should the rectum be involved. In order to prevent further contamination from a wound of the rectum, a diverting proximal colostomy is indicated in cases of perforation below the peritoneal reflection, and the retroperitoneal space should be adequately drained from below with a drain on one side of the coccyx. This drain should be placed in a separate incision rather than through the wound of entrance.

Room for Colostomy

In cases of perforation of the rectum above the peritoneal reflection, the abdomen should be opened by use of a midline or paramedian incision to leave adequate room for a colostomy.

Bladder wounds should be sutured and a suprapubic cystostomy catheter used for drainage as well as a urethral catheter. In injuries to the bladder or urethra, the space of Retzius should be also drained.

The use of the question-mark incision in cases of hemorrhage of the glutei reveals the important vessels without injury to the adjacent vital structures, and it is best described in the following manner:

The incision is carried in an arc for a hand breadth along the posterior crest of the ilium from the posterior superior line spine forward and downward to a point one finger breadth behind the anterior edge of the greater trochanter.

The incision is continued downward, bisecting the outer face of the shaft of the femur to the lower level of the gluteal fold. It is carried medially in the fold to a point in the mid portion of the back of the thigh where it is continued distally on the leg for as far distalward as is needed.

Femoral Side Freed

The femoral side of the gluteus maximus is freed by cutting the insertion on the trochanter and splitting the iliotibial band on the femur.

The pyriformis muscle is the key to the location of the neurovascular bundles, with the superior gluteal artery and nerve between the pyriformis and the gluteus medius superiorly. The sciatic artery and nerve emerge from beneath the pyriformis and lies beneath the gluteus maximus lid.

If hemorrhage from within is suspected, then it becomes necessary to do an exploratory laparotomy and ligate the hypogastric vessels.

In summary, the handling of wounds of this area is the same as elsewhere, but requires a more thorough knowledge of the anatomy and the anatomical approach.

DERMATOLOGY

Dermabrasion With Rasps

Torre, D., A. M. A. Arch. Dermatol. 74:615, 1956

Rasps are employed by the author in abrading small areas and for "finishing off" after using wire brush abrasion. Suitable instruments can be obtained from sculpture supply stores. When using the rasp technic the area to be treated is infiltrated with a local anesthetic. "Proper depth can easily be determined by appearance of the field. A sufficiently abraded area will show an even bleeding pattern." The rasp technic is said to offer several advantages over the sandpaper method.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

March 21, 1957

F. P. Bornstein, M. D. — Editor — Case No. 744

Presentation of case by Dr. Pablo Ayub

History — Dr. Nathan Kleban:

A 63 year old Latin-American widower was admitted to the hospital on October 29, 1956.

One year before admission the patient had an upper respiratory infection which lasted about 10 days. This was followed by episodes of stabbing pain in the left lumbar region lasting about one hour, reddish discoloration of the urine, which contained sand-like material, and yellow appearance of the eyes and skin. Whether there was a temporal relationship of these events was not recorded by the historian. The patient got up to void four times each night, but he had done this for eight years.

Despite no loss of appetite, there was a 25 pound decrease in weight during the last three months.

One week before entry the patient noted evening chilliness and cold sweating followed by feverishness. A cough productive of white, frothy sputum was present for several days.

Nocturnal bed-wetting about every three months had occurred for 20 years. Vomiting, constipation, diarrhea and unusual color of stool were denied.

Physical Examination:

The patient appeared undernourished, chronically ill, in no distress. T. 100.6, P. 85, regular. R. 24, regular. B. P. 118/72. Skin and mucus membranes were icteric. Rales were heard over the lower right lung field. The abdomen was distended. Bowel sounds were diminished in frequency. Four fingers-breadth below the right costal margin the liver edge was felt. Palpation in the epigastric region elicited a painful response. Prostatic enlargement was reported found on rectal examination.

Hospital Course:

Nurses' notes recorded that the patient had no appetite and complained of mid-abdominal pain in contrast with the house officer's note that the patient had pain in the left lumbar region. On October 31 liquid stool was passed by rectal tube. The nurses recorded severe generalized abdominal pain. A house officer noted slight distention, decreased bowel sounds, and signs of fluid in the abdomen by percussion. For several days the patient did not complain of pain and took oral feedings.

A large, tarry-like stool was reported on November 4, followed that night by the passage by rectum of clotted blood. Clotted and liquid blood continued to come from the rectum until November 6 when stools became brown in color, at times formed and at other times loose. Six units of whole blood were given, starting about nine hours after the first rectal passage of blood was noted. A sippy diet was ordered. Decubitus ulcers were treated beginning on November 6. The adbomen continued to be distended. Coma was followed by death on November 8.

In addition to whole blood the patient received Azogantrisin, Sigmamycin, Sparine, vitamin K, and Aspirin.

Laboratory:

Chest film: . . . a bilateral intensification of the pulmonary markings at the bases with thickened pleura over the diaphragm . . . are consistent with a bronchiectasis. Survey film of the abdomen: changes consistent with an adynamic ileus. Gall bladder: Non-visualization, most probably on the basis of calculus cholecystitis. Abdomen: A moderate amount of gas . . . in the large and small bowel . . . consistent with an adynamic ileus.

Hb. 13.9, 11.8, 11.1 gms; Hematocrit 51, 44, 39, 43 per cent; WBC, 25,400; 25,400; Segs. 81, 80; Stabs. 11, 2; Lymph. 7, 18; Mono. 1; Eos. 1.

Urinalysis: Clear, red, red; acid, 1.011, 1.012, 1.011; albumin neg., neg., 1+; sugar neg.; WBC 3-6, 1-3; RBC rare; finely granular and hyaline casts.

FBS 108 mg per cent; serum albumin 3.8, globulin 3.4; BUN 19.5, 21.5; icterus index 23.2 in slightly hemolyzed blood; 4 per cent PSP excretion in 2 hours; ESR 22 mm.; ceph. flocc. 3+ in 24, 4+ in 48 hours; stool on Oct. 31, greenish brown, 1+ occult blood, no ova, cysts or parasites found.

Antistreptolysin 0 titer 50. VDRL negative. 20.5 per cent BSP retention in 45 minutes. Febrile agglutinations negative.

X-Ray Discussion — Dr. Vincent Ravel:

We will discuss first the chest, then the abdomen, then the gall bladder. We attempted to do an upper gastro-intestinal series on this patient but he went into a shock-like state, and we just couldn't even continue with getting the usual films that we want in an intestinal series; because at one time it looked like he would have passed out in the X-ray

department, and this we do not like. We have enough problems without having patients die on the table.

The first examination that we have is the chest, and the significant findings are the changes that you see in the right base. There is a slight elevation of the right hemidiaphragm; there are compression phenomena at the base; there is evidence of a thickened pleura over both hemidiaphragms; and when we see these we become suspicious of a bronchiectasis. The remainder of the chest reveals no significant pathological features. The aorta is a little elongated and tortuous. Degenerative changes in the thoracic spine are consistent with the chronologic age of the patient.

Abdominal Films

Now when we come to the abdominal films, using the recumbent and upright positions, we have gas in both the large and small bowel and these changes of course are consistent with an adynamic ileus.

One of the significant things I think, now that I review the whole picture, is the elevation of the right hemidiaphragm and the general impression that there was enlargement of the liver.

That, of course, brings up a number of interesting possibilities, especially in view of the fact that we have a non-visualization of the gall bladder following the administration of telopaque; and, when we don't see a gall bladder, we are very prone to call it calculus cholecystitis; because over 90 per cent of the times when a gall bladder examination is performed and you have non-visualization, you are almost sure to be correct. However, we are not able to identify any opaque calculi.

With an enlargement or an increase in opacity overlying the liver shadow, an elevation of the diaphragm and with the compression phenomena that we see at the right base, there exists a very interesting possibility of a hepatitis or an amoebic abscess of the liver or a pronounced cholangitis.

Intermittent Jaundice

Fundamentally then we have a patient with a history of intermittent jaundice and with non-visualization of the gall bladder. We must come back to the most common cause, and that is a calculus cholecystitis with a biliary obstruction.

In view of the fact that we can't demonstrate the gall bladder radiographically, we are willing to go out on a limb and call this a calculus cholecystitis. There may be a secondary cholangitis or a secondary hepatic involvement, or enlargement of the liver, possibly secondary to an amoebic abscess. There are no significant calcifications in the right upper quadrant.

Radiographically we can see the properitoneal fat lines and the psoas shadows and we don't have enough of the obscuration of the usual abdominal landmarks to say that there is ascites. Of course this may be secondary to peritonitis.

Clinical History

I can't identify this as an abdomen with peritonitis as we don't have any radiographic evidence of it. One of the other things that is a little interesting is that the clinical history says that the patient is malnourished, yet we see quite ample soft tissues throughout the abdomen and the lateral chest wall, I mean this doesn't look like a real undernourished or malnourished individual.

We have an adynamic ileus. You can see both large and small bowel gas; and when you see both large and small bowel gas without a history of intermittent colicky pains or signs of mechanical obstruction, you have to consider this as an incomplete obstruction, if it is an obstruction. If we cannot definitely exclude large bowel gas, we cannot call this a complete obstruction from the radiographic standpoint.

Clinical Discussion: — Dr. Pablo Ayub:

I will discuss this case from a clinician's point of view and then give the differential diagnosis:

Throughout this patient's illness, the clinician is confronted with many split trails toward solution of this patient's problem.

From the history the lungs, kidneys, liver, biliary system and the possibility of some insidious process has to be considered. Apparently he had trouble with his prostate for about twenty years.

One week prior to admission, something flared up which caused fever, chills and upper respiratory distress. This process did not respond to therapy at home and consequently he was sent in to the hospital.

No Distress

The physical examination reveals a patient with fever but in no distress. It confirmed the presence of a disease process which probably involved the lungs, particularly the right one, the liver, and/or the biliary system, the abdomen and the prostate.

Pursuing the evaluation of each of these organ-systems separately by ancillary methods we find:

(1) The urinary findings on various occasions as well as the KUB lead the clinician into a blind alley. The PSP test, I believe, is a red herring.

(2) The X-rays of the chest lead the physician towards an equivocal conclusion only.

(3) When we focus our attention on the liver and biliary system, the ancillary findings are more rewarding:

- **(a)** Here we find evidence of liver disease as reflected by the cephalin flocculation tests and the icterus index.
- **(b)** Evidence of gall bladder disease.

Several additional valuable tests unfortunately were not performed. An alkaline phosphatase and the Van Den Berg tests would have been appropriate at this time in order to differentiate the type of jaundice.

(4) Sometime along the course of this patient's illness, X-rays of the abdomen revealed the presence of a disease process inside the abdomen as reflected by an adynamic ileus.

Little Information

The record of this patient's course in the hospital gives us very little information except for the events which culminated in the patient's death — that is, the events leading to and ending in massive gastro-intestinal bleeding. I believe it would be safe to say that this particular phase began on October 31, when severe generalized abdominal pain was recorded in association with loose greenish stools which contained occult blood. The distention, decreased bowel sounds and signs of fluid in the abdomen noted at this time, I presume, persisted until the patient's death.

It would have been informative if the record had contained something with reference to the jaundice, whether it was progressive or stationary, whether there was itching or not, whether any thought was given to surgical intervention insofar as the gall bladder was concerned. I presume that a rectal examination was repeated at this time and perhaps a sigmoidoscopic examination was performed. However, there is no record of this being done.

Return To Problem

We return to the problem of differential diagnosis with much desired information lacking. Nevertheless, there are four outstanding findings of paramount importance around which we must discuss the diagnosis:

1. Massive gastro-intestinal bleeding
2. Jaundice
3. Adynamic ileus
4. Enlarged liver

The problem here is to find what disease conditions have a symptomology including the four findings mentioned above.

I will consider four centered around the liver and biliary tract:

(1.) Malignancies:

- **(a)** Liver
- **(b)** Gall bladder
- **(c)** Head of pancreas

(2.) Cirrhosis with portal hypertension with esophageal varices with subsequent bleeding

(3.) Gall stones with intermittent jaundice and cholangitis with biliary cirrhosis

(4.) There may be amoebiasis

Second Group

The second group will contain abdominal lesions outside the intestines whose disease processes can explain the four findings mentioned before:

(1.) Inflammatory lesions in the appendix or pancreas, Meckel's diverticulum, which could cause thrombophlebitis or phlebothrombosis to the extent that obstruction of the portal circulation would result. The embarrassment of the circulation would culminate in massive bleeding manifested early by severe pain and adynamic ileus.

(2.) Extra-intestinal malignant tumors such as a prostatic tumor and metastasis to portal lymph nodes causing secondary embarrassment to the circulation.

(3.) Mesenteric vein thrombosis alone.

The third group will contain intestinal lesions:

(1.) Some benign lesions can explain the massive gastro-intestinal bleeding but do not fit the rest of the findings:

- **(a)** Amoebiasis with liver involvement
- **(b)** Diverticulosis with ulceration and massive bleeding
- **(c)** Polypoid disease with intussuseption with massive bleeding

(2.) Malignancy of the large intestines with metastasis:

- **(a)** Metastasis to the liver in the right or left side with terminal erosion of large artery
- **(b)** Secondary abscess formation with pylephlebitis and emboli to liver and lungs.

Terminal Course

Now, I believe any one of the disease processes mentioned could explain the findings and the terminal course in the hospital; but I believe emphasis should be placed on an insidious illness which most probably began several months before admission, that is, a malignancy.

In view of the fact that the gall bladder carcinoma is notoriously silent until the final manifestations reveal themselves, I believe it deserves special consideration. Its presence certainly could explain most of the findings here. Against it is the fact that the jaundice in carcinoma of the gall bladder usually is progressive and deep. Such is the case also in carcinoma of the head of the pancreas.

Carcinoma

Carcinoma of the prostate usually metastasizes without involving the liver or the portal circulation, and the clinical findings do not warrant such conclusion.

Carcinoma of the large bowel, especially the right

sided lesions, are silent lesions except that they usually are palpable, are associated with a macrocytic anemia, and except for carcinoma of the cecum, present a clinical picture of an obstructive lesion. These lesions, however, are usually asymptomatic until complications develop.

I have not considered left sided lesions because they usually reveal themselves early with change in bowel habits and evidence of obstruction.

The lymphomas, Hodgkins, reticulo-cell sarcoma and other malignant diseases of the reticulo-endothelial system cannot be excluded but they do not fit a disease process pattern such as the one we have here.

Conclusion

In conclusion, if I had to choose, I would pick:

(1.) Carcinoma of the gall bladder, mostly because of the X-ray findings of a non-functioning gall bladder.

(2.) Carcinoma of the cecum or hepatic flexure with metastasis to the liver with secondary abscess formation and erosion of the large artery in an ulcer.

(3.) Mesenteric thrombosis secondary to an appendiceal abscess with pylephlebitis, this in view of the chills and fever that accompanied the illness.

Dr. F. P. Bornstein:

Thank you, Dr. Ayub. There is one question I would like to ask you and would like to get the general comment on. I was struck by the fact that from the very beginning the white count of this patient was running around 25,400. How would you explain this?

Dr. Ayub:

I would consider it due to an inflammatory process of the abdomen. There could be a peritoneal irritation associated with some form of an abscess, or it could be a generalized infection; but I believe in view of the findings, in view of the adynamic ileus, there could be an abscess in the abdomen either due to a malignancy, or an appendicitis with a pylephlebitis and subsequent liver damage.

Dr. Bernard Samp:

The question that you asked Dr. Ayub refers to what impressed me in this particular protocol, namely, what was the reason for the elevation in the white count? That elevation in the white count can arise either from a blood dyscrasia, or we are going to prove what French says in his book of differential diagnosis, "a white count of 20,000 or over is indicative of pus under pressure". I believe then we could come to the conclusion, as I believe I have, that there is an amoebic abscess of the liver with destruction of liver function, that has led to this patient's demise.

Dr. W. R. Gaddis:

I would like to point out one thing here that no one has mentioned, and that is the matter of decubitus ulcers in this patient. Now the loss of trophic impulses and the loss of nutritional quantity in sufficient amount to make this patient develop decubitus within eight or nine days of his admission is certainly a terrific factor to be considered.

If this patient had lost 25 pounds, that alone would not be enough to develop a decubitus.

Of course I think we are all familiar with the fact that we frequently see decubitus ulceration particularly in the chronically ill patient, and specially those who have central nervous system disease or degeneration of one type or another.

I don't know what the explanation or the reason for the decubitus in this patient is.

It certainly is remarkable that within a relatively short period of time we have the development of a most feared complication as far as hospital therapy is concerned.

Dr. Joe Carter:

It just dawns on me that I recall seeing this patient. I went on the service about November 1, and I think this patient was too sick; there was no opportunity to work him up, we couldn't even get a GI series.

After he got into such a bleeding episode, it took six or eight transfusions to try to support him. It was my impression at the time that he had a malignancy in the right side of the intestinal tract that had metastasized to the liver, and he probably may have had some abscesses.

Clinical Impression: Intestinal obstruction.

Dr. Ayub's Diagnosis: Carcinoma of gall bladder or intestinal tract with metastasis to liver.

Pathological Diagnosis: Acute peritonitis due to ruptured amoebic abscess; amoebic ulcers of large bowel.

Pathological Discussion—Dr. F. P. Bornstein:

On autopsy we found the body of a fairly well

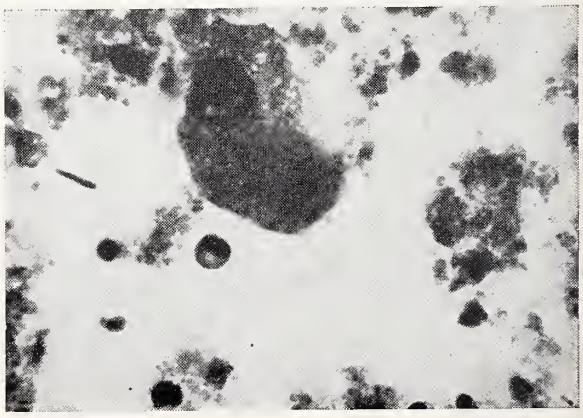


Figure 1

developed, fairly well nourished man. The skin was moderately jaundiced. The main pathological findings were in the abdominal cavity. The peritoneum was dull and hyperemic. The peritoneal cavity contained about 3000 cc. of pus.

In searching for the source of the peritonitis, we found a large abscess mass in the right side of the abdomen involving the liver, the ascending colon and the cecum.

On sectioning through the liver, a large abscess was present in the lower lobe at the inferior surface which connected with the minor omental bursa. The inflammatory mass in the large bowel showed numerous ulcerated areas in the mucosa.

On microscopic examination the most significant finding is the presence of numerous organisms, mostly in the bowel and the liver abscess, which were identified as endamoeba histolytica (Fig. 1).

In summary, then, this is the case of a man who suffered for a considerable period of time from amoebiasis as indicated by his weight loss. He then developed a liver abscess with liver damage; the abscess perforated and produced the fatal peritonitis.

Dona Ana County (Las Cruces, N. M.) Medical Society Has Science Fair Program

In an open letter sent to the Las Cruces, N. M. High School Science club, and science students and teachers at Las Cruces High School, Drs. James C. Sedgwick and Andrew Babey of Las Cruces, N. M., lauded teachers and students for their work in organizing the "Science Fair" which was presented at the school in March.

The letter is as follows:

"A year ago at the annual meeting of the New Mexico Medical Association, two or three members brought it to the attention of the Association that during the preceding Science Fair there had been an alarming lack of interest in scientific subjects of a biological nature. Most of the interest had been concentrated on physical sicences, electronics, etc.; and that even in the judging of the State Science Fair, the biological exhibits did not get the attention that we felt they deserved.

"Consequently, the State Medical Association set machinery in motion to attempt to do something to interest young boys and girls of scientific leaning to more interest in the biological sciences. One of the factors that influenced our decision was the fact that in the last few years there has been an alarming decrease in the number of applicants to medical schools of the country, which, if continued, could only lead to an inadequate supply and quality of physicians in the not too far distant future.

"Consequently, it was decided that the State Medical Association would offer prizes to winners in biological sciences on state level.

"The Dona Ana County Medical Society then decided that if students were going to be able to compete on a state level, interest would have to be created on a local level. The Dona Ana County Medical Society decided to offer prizes to the winners of the County Science Fairs.

"You teachers and sponsors of the Science Club have been most cooperative and have helped make our project a success. We offered and you accepted our offer to furnish judges for the Biological Sciences. The two undersigned were appointed by the Dona Ana County Medical Society to act as judges for your Science Fair.

"We will have to admit to a little misconception of the job that confronted us. We were more or less of the opinion that you had set aside far too much time for the judging and that we could probably run through the exhibits in much less time. We were in for the surprise of our lives!

"Not only had you not allotted too much time, you had not alloted enough. We spent some two hours going through these exhibits, studying them and trying to judge them, and there wasn't enough time. The projects and exhibits were all excellent. The originality, initiative and thoroughness exhibited during the Fair fairly made us catch our breath.

"For whatever it is worth, when we had finished judging them the first time, we found that we had a tie for first place, and a tie for second place. We had to go back and re-group them and judge them on technical detail in order to pick a winner. Our chief regret was that there could only be one first place and one second place winner. There were several that we thought should have been winners.

"Our sincerest congratulations on a job beautifully done. We came away with the feeling that as long as America can produce the kinds of minds that obviously worked on these projects, we need not fear for the future of Science here. Is this not better than doing it by coercion?"

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VOL. XXXVIII JULY, 1957 No. 7

CURRENT THERAPY

The Duality of Diabetes Mellitus and Its Relationship to the Usefulness of the New Oral "Antidiabetic Agents"

By T. Sterling Martin, M. S., M. D., El Paso*

All physicians who have dealt with more than a few cases of diabetes mellitus have come to appreciate a considerable difference between a type, usually having onset in an older overweight patient, in which ketosis is rare and weight loss highly effective in controlling hyperglycemia, and another type, usually beginning rather abruptly and early in life, in which ketosis occurs very easily and weight loss is of little benefit and usually not indicated anyway, since the patient is apt to be already lean.

Most of us have thought of these two types as simply milder and severer forms of fundamentally the same disease. But there is good reason to consider them fundamentally different diseases.

An understanding of this difference is important to rational management, not only in setting criteria for good control by methods already in use, but also in applying the new oral hypoglycemic agents, the sulfonylureas.

Not New Concept

It is not a new concept to think of primary and secondary diabetes, or, more specifically, diabetes due to absolute insulin deficiency and diabetes due to only relative insulin insufficiency.

We have ordinarily placed in the "secondary" category those rare cases of diabetes occurring in endocrine diseases that are characterized by an overproduction of hyperglycemia-promoting hormones, e. g., acromegaly and Cushing's syndrome, where unusual amounts of insulin are required to obtain homeostasis, clinical diabetes appearing when the patient's islets are no longer able to secrete a sufficiently excessive quantity of insulin.

And we have thought of all ordinary diabetes as being "primary". But convincing evidence has been put forth to show that the type of common diabetes (hereafter referred to as Type II) which is ordinarily associated with onset in the older, more or less obese patient, is just as much a secondary disorder as the diabetes of acromegaly, and a different disease from the type of common diabetes usually associated with youth and leanness (hereafter referred to as Type I).

Concepts Reviewed

Before mentioning this evidence, it may be appropriate to review the generally accepted concepts of the mechanism of blood sugar level control and the sites of action of insulin. In brief, the elevation of blood glucose is promoted by:

A) Introduction of glucose into the circulation

1) Absorption of glucose from the bowel

2) Release of glucose from the breakdown of stored glycogen

3) Release of glucose manufactured from non-carbohydrate substances (gluconeogenesis)

B) Inhibition of glucose utilization

1) Blockage of uptake of glucose by the tissues and its breakdown to CO_2 and H_2O (energy)

2) Blockage of conversion of glucose to fatty acids (lipid storage)

These two routes of utilization account, about equally, for about 95 per cent of glucose expenditure. The remainder is converted to glycogen in the liver. Both of these utilization processes are promoted by insulin.

Other Influences

The other endocrine influences on the blood glucose elevating processes are indicated (oversimplified) in the following table, in which the hormone that promotes each blood-sugar-elevating process is shown after it:

Absorption of Sugar from Bowel	No direct endocrine control

*Dr. Martin this month is substituting for Dr. Jack A. Bernard, regular conductor of this section.

Glycogenolysis	Glucagon Adrenalin
Gluconeogenesis	Growth Hormone Adrenocorticosteroids
Inhibition of Utilization (by antagonizing phosphorylation)	Growth Hormone

ACTH is involved through stimulating production of adrenocorticosteroids and probably in abetting the action of growth hormone on phosphorylation.

Known Stimuli

The only known stimuli to the production of insulin by the islet beta cells are hyperglycemia and the action of the right branch of the vagus nerve. One can readily see by a glance at the table why unusual demands for insulin may result from certain endocrine overproductive disorders, with a diabetic state (i.e., hyperglycemia and glycosuria) sometimes occurring.

It will be shown that Type II diabetes probably occurs through a blockade in one of the major pathways of glucose utilization, lipogenesis, occurring for reasons other than subnormal insulin production.

All of the secondary diabetes may manifest insulin exhaustion at times, when the beta cells, because of overwork, can no longer produce even ordinary amounts of insulin, resulting in decline in glycolysis for energy production, with consequent compensatory increase in fat catabolism and thereby ketosis. Characteristically, however, after the stress has passed, the Type II diabetic will return to his former state.

Types Compared

Now, having introduced the concept of Type II diabetes as a disease not primarily of insulin deficiency, but of fat metabolism, with excessive demands on the beta cells as one of a number of its consequences, let us compare it to Type I diabetes both clinically and biochemically. Most "juvenile" diabetics are Type I, and a large percentage of them become "brittle" within a few years of onset, so that these terms are roughly interchangeable. On the other hand, Type II diabetics are almost invariably "stable", in the absence of severe infection and the like. Lawrence of England, a leading proponent of the duality of diabetes, uses the term "lipoplethoric". The two types have long been appreciated in Europe, under the terms *diabéte maigre* and *diabéte gras*.

Type I

(Primary Insulin Insufficiency)

Onset tends to be abrupt with fatigue and weight loss the dominant complaint

Onset mainly in childhood and youth — may begin at any age

Unrelated to weight

Ketosis occurs easily since an absolute insulin deficiency is present

Insulin-sensitive, and frequently brittle because of completeness of loss of homeostasis in the absence of endogenous insulin — widely fluctuating B. S., easily have insulin reaction after activity.

Low rate of degenerative change in proportion to other manifestations. Non-hyperlipemic

Type II

(Lipoplethoric Diabetes)

Onset tends to be gradual with polyuria and thirst the chief complaint

Onset mainly in middle life and beyond

Almost exclusively in those over ideal weight

Ketosis rarely occurs (barring conditions of CHO starvation such as will produce it in non-diabetics) since adequate insulin is present for completion of glucose oxidation.

Relatively insulin-tolerant and stable

Disturbances protein metabolism, especially mucoproteins (perhaps the basis of capillary disease: Kimmelstiehl-Wilson disease, diabetic retinopathy). High rate of acquisition of diabetic vascular complications. Hyperlipemic.

The bioassay of circulating insulin in human plasma shows generally normal levels in Type II diabetics. Exogenous labeled insulin is recoverable. On the other hand, Type I diabetic plasma usually contains no insulin on assay.

Added insulin is not recoverable unless the blood sugar level is physiologic. Additional laboratory support for clinical separation of the two diabetes was furnished by Hartcroft, Wrenshall, *et al,* in Toronto.

They studied the histologic appearance of pancreatic cells from dead diabetics and measured the extractable insulin. In the juvenile cases, they could recover little insulin. In the older patients, much more was recoverable, though not as much as from normal controls.

Still Mysterious

A great deal of mystery still surrounds the subject of insulin antagonists. Insulin antagonism probably becomes a predominant problem in some cases of severe diabetes where marked increases in insulin requirement develop. Glucagon, growth hormone, ACTH and certainly others unknown and quite possibly more important, are involved.

In summary, the modern concept of lipoplethoric diabetes places the basic fault in the fat storage mechanism which is brought out when storage is forced above the average and which inhibits further lipogenesis from glucose, so that much of the ingested CHO has "nowhere to go", to put it over simply. As a result, the fat precursor, glucose, piles up in the blood stream.

Storage Deficit

The storage deficit also is blamed for the hyperlipemia, consequent enhancement of atherosclerosis and, somehow, for the interference in mucoprotein chemistry which seems to be the cause of the capillary syndromes peculiar to diabetes and occurring in

highly disproportionate degree in stable adult diabetics compared with brittle adult diabetics of comparable duration.

If the storage blockade is removed by reducing the amount of fat already in storage, the hyperglycemia disappears.

Naturally, there are intergrades, mainly through permanent islet "exhaustion", presumably, occurring in Type II diabetics. Perhaps some cases are due to decimation of beta cells, in lipoplethoric individuals, by the same unknown toxins which are considered responsible for the production of Type I diabetes.

Alivisator and McCullagh (*American Journal of Medicine*, vol. 21, pp. 344-357, 1956) were unable to place 23 out of 172 diabetics into the two main groups, and had to consider them intergrades.

Limitations

With the above ideas in mind, it will be easier for the reader to understand the limitations of the new oral "antidiabetic" agents, and the implications of their presumed site of action.

These chemicals, the arylsulfonylureas, were first announced as useful hypoglycemic agents in the German medical press in October 1955.

Since then, the two major chemicals, carbutamide and tolbutamide, have received extensive clinical trials throughout the world, and have been studied in many laboratories. The clinical results were fairly uniform.

Carbutamide is probably doomed to discard because of frequency of toxic reaction, but tolbutamide, recently released to general use in this country as "Orinase", is much safer.

In the past few months, there have been a number of reports from Europe on a newer derivative, Rastinon, claiming its superiority to tolbutamide.

Orinase

Orinase will reduce hyperglycemia and glycosuria in Type II diabetics. The reduction in the morning fasting sugar level is the most impressive effect.

It has no effect on the sugar level curve of a glucose tolerance test, nor on post-cibal sugar levels. It cannot prevent ketosis.

One by one, the mechanisms of action proposed for it have been disproven: that it acts similarly to insulin; that it stimulates beta cells to increased insulin output, or inhibits alpha cells; that it inhibits a supposed insulinase so that endogenous insulin lasts longer; or (but there is still doubt here) that it inhibits glycogenolysis.

The clinical and laboratory data best support the hypothesis that it is a selective liver toxin, inhibiting certain enzyme systems with resulting blockage of liver functions concerned with manufacture of glucose from other substances — galactose, fructose, perhaps gluconeogenesis in general.

Gluconeogenesis

Gluconeogenesis is a mechanism of "internal feeding" keeping up blood glucose after some hours of fasting when the liver's stored glycogen begins to be depleted (hence, Orinase's main effect — fasting blood sugar depression).

It may be a stronger activity than average in some persons, through unusual activity of agents that stimulate it.

One would guess, then, that Orinase, if it works by blocking one of the channels of entry of glucose into the blood stream, would be useful only in those diabetics in whom dietary restriction is the paramount element in management. And this, indeed, is the consensus of opinion from the clinical experiences.

Much Abused

Some authorities feel it will be much abused, being used to help accomplish what proper dietary management alone would accomplish. They feel that, if other management is optimally adhered to, in only about 10 per cent of all diabetics will Orinase be of further benefit.

This group includes chiefly intergrade types in whom some insulin is still required although ideal weight has been obtained.

Insulin requirement may be reduced or eliminated in many of these. In many more typical Type II diabetics who take insulin in lieu of optimal dietary control, Orinase will abet their inadequate efforts in diet restriction.

In the Type II diabetic who is allergic to the small quantity of insulin he needs, or simply refuses to take it, Orinase will be useful. Needless to say, since the drug cannot promote combustion of glucose, it will not reduce ketosis and is of no help to the truly insulin-insufficient.

The course of a rare Type I diabetic may be smoothed by Orinase — perhaps because excessive gluconeogenesis was occurring.

No Surprise

The monotonously repeated conclusions of report after report, including that of the Committee on Summarization of the Conferences on the Present State of Knowledge Concerning Effects of the Sulfonylurea Compounds in Diabetes Mellitus (of the American Diabetic Association), as published in *Diabetes*, Jan.-Feb. 1957, will by now be no surprise to the reader: Orinase is effective almost exclusively in the overweight diabetic over 40, whose diabetes is of few years' duration, uncomplicated, and who is being carried on small to moderate doses of insulin.

Whether to use it in an individual case in this group, particularly when further weight loss alone would suffice, will require good judgment by the physician.

Further References:
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Vallence-Owen, J., Lancet, vol. 46, no. 1, 1954

MEETINGS

Dr. Ziegler of Española Elected President of New Mexico Medical Society

Dr. Samuel R. Ziegler of Espanola was elected president of the New Mexico Medical Society at its 75th annual meeting in Santa Fe, May 15 - 18. Dr. Stuart W. Adler of Albuquerque was the retiring president.

Other new officers elected were Dr. James C. Sedgwick, Las Cruces, president-elect; Dr. Louis M. Overton, Albuquerque, vice-president; Dr. Omar Legant, Albuquerque, secretary-treasurer.

Six new members of the Board of Supervisors are Dr. Richard Pousma, Gallup; Dr. Pierre Salmon, Roswell; Dr. William J. Hossley, Jr., Deming; Dr. James McCrory, Santa Fe; Dr. Alfred Jensen, Hobbs; and Dr. William Natoli, Los Alamos.

Elected as counselors were Dr. Gerald Slusser, Artesia; Dr. George Prothro, Clovis; and Dr. Wendell Peacock, Farmington.

Dr. Samuel R. Ziegler

Guest speakers were Lauren V. Ackerman, M. D., Professor of Surgical Pathology and Pathology, Washington University School of Medicine, St. Louis, Missouri; Philip Hodes, M. D., Professor of Radiology, University of Pennsylvania School of Medicine, Philadelphia, Penn.; William P. Longmire, M. D., Professor of Surgery, University of California at Los Angeles School of Medicine, Los Angeles, California; I. Arthur Mirsky, M. D., Professor and Chairman of the Department of Clinical Sciences, University of Pittsburgh School of Medicine, Pittsburgh, Pa.; I. Snapper, M. D., Director of Medical Education, Beth-El Hospital, State University College of Medicine at Brooklyn, N. Y.; Theodore C. Panos, M. D., Professor of Pediatrics, University of Texas Medical School, Galveston, Texas; and James R. Willson, M. D., Professor and Chairman of the Department of Obstetrics and Gynecology, Temple University School of Medicine, Philadelphia, Penn.

The next meeting of the Society will be held in Albuquerque.

The New Mexico Orthopaedic Society was combined with the New Mexico Chapter of the Western Orthopaedic Association and the group will have its next meeting at the Southwestern Medical Association meeting in El Paso October 9 - 11.

Born in Hanover, Pennsylvania, Dr. Ziegler received his B. S. from Otterbein College in Westerville, Ohio, and his M. D. from Western Reserve University Medical School. He took his internship and surgical residency in the Youngstown Hospital Association in Youngstown, Ohio. He began the practice of medicine in Youngstown.

He served for three years with the Army Medical Corps, with 24 months overseas in the South Pacific, emerging with the rank of Major. In 1946, he moved to Espanola, where he has since been engaged in the practice of general surgery.

Dr. Ziegler is a member of the International College of Surgeons and a member of Phi Rho Sigma. He is a Past President of the Santa Fe Medical Society, served as Vice-President of the New Mexico Medical Society from 1955 to 1956, has been a member of the Board of Supervisors for two years and a member of the Council of the Society. He is a Past President of the Espanola Lions Clubs and is a member of the United Brethren Church. He and his

wife, Isabel, have two sons, Samuel R. Jr., 14, Norman, 13, and a daughter Julia, 6.

The complete text of Dr. Ziegler's address at the meeting is as follows:

At the turn of the century, the busy physician had to limit his pace to that of his horse. In most instances his office was part of his home and the telephone, although invented twenty-five years earlier, had not reached the point where it was an everyday convenience in the average home. Hospitals in small communities were almost non-existent and only the seriously ill were sent to these institutions in the larger centers.

Disease brought about an extremely close Doctor-Patient relationship. To the family, he was internist, surgeon, psychiatrist and obstetrician. They were solely dependent upon him. In this respect I was impressed by a recent statement issued under the aegis of the A. C. S. by Dr. Paul R. Hawley.

"Every family needs a medical adviser upon which it can rely, whether or not such a need is recognized. The family physician is the only practitioner of medicine who can fill this role properly . . . "

Changing Environment

This changing environment has brought all but six-tenths of one per cent of our population within 25 miles of a doctor and with today's high speed automobile, has reduced that 25 miles to a matter of minutes. With this trend, medicine and its rapidly developing specialties became centralized in larger communities about large and well equipped hospitals; and the family doctor, as we once knew him, gradually became a picture on the wall. He became a screen by which the patient was sent to Dr. A for his sinuses, Dr. B for his heart and Dr. C for his urological problem, and so the story goes . . .

Advances in medicine, miraculous as they are, have in themselves produced changes in our environment. People live longer because of better medical facilities. The average life expectancy, at the turn of the century, was 46 years.

Now the average life expectancy is 65 years or more and the problems of geriatrics present themselves, not only medically but sociologically. These people must be clothed, fed, housed and made to feel useful, as well as having their ills cared for. The problems of caring for a greatly increased elderly population is not simple either sociologically or medically.

Pneumonia Controlled

Pneumonia is no longer our chief cause of death, thanks to the miracle of antibiotics. Polio appears to have been conquered; infant mortality is decreasing and more young people enter or stay in our ranks and population figures increase by leaps and bounds. With this come the problems which accompany an increase in population, need of better housing, more ideal communities, jobs for more people and more hospital beds. Heart disease, arthritis, multiple sclerosis, muscular dystrophies and cancer, which in years past were minor killers, compared to pneumonia and tuberculosis now occupy our more serious thoughts.

Our rapid progress in medical research and discovery has made it impossible to keep up with all the advances. Because of this, more men in recent years have turned to some special phase of medicine in order to utilize better their skills, rather than cope with the broader aspects of a general practice in a smaller community with the inevitable and incessant ringing of the phone. It is not an unusual occurance to pick up a magazine and read about the young doctor who has left his beloved small community and his general practice to specialize, and invariably, the reasons given are that the individual could no longer face the rigors of his practice —had too little time with his family, or got too little in return for services rendered.

Specialist Important

May I say that I do not mean by these remarks to belittle the specialist in any way. He is an important and absolutely necessary part of the practice of medicine today. Medical Science would not have made such rapid progress without them. The trend is more the result of, rather than the source of the changes in our sociological environment.

This trend in medicine has accompanied the trend of change from a rural to a more urban existence. I shall mention a few factors which it seems to me have contributed to this change: (1) our rapid increase in population, (2) more attractive jobs in the larger centers, (3) the difficult plight of the farmer and rancher, and (4) the increased conveniences in our larger communities. Such changes in our social order cannot help but be reflected in the practice of medicine.

Small Towns Suffer

With this trend, the small community has suffered the loss of a convenient and adequate medical service. In recent years, medical schools have geared part of their curriculum to inspire young physicians to enter these small communities. Many of our schools have risen nobly to the challenge by showing young men the opportunities and helping them prepare to practice efficiently in these small town areas. The small community itself has accepted the challenge in many instances, and, awakening to its right to have up-to-date medical facilities, has utilized the Hill-Burton Act; or being driven by its own necessities, has constructed its own community hospital. Even then, the small community has at times experienced some difficulty in attracting physicians.

A recent survey of young men and women nearing the completion of their college courses revealed that

an astoundingly small number of them were interested in the service professions. As a result medical schools are not getting enough well qualified students. A young person entering the "earning years" is much more interested in security than service. Here it is that we as physicians must help these young people to see the advantages of such service and to sense the great personal stimulation and satisfaction that comes from it. We must rise to meet this challenge.

Something For Nothing

With all this change there has grown up a generation which has received a great deal for little or nothing and a great many have continued to expect "something for nothing." One only has to read "The Trojan Horse" by Dr. Orr, to see how this situation continues to be expanded medically by the V. A. With this something for nothing idea, the mal-practice suit rate has jumped by leaps and bounds.

But I wonder, as we look at ourselves critically, have the changes in our environment, the idea of something for nothing, the tremendous advances in medical knowledge, been solely responsible for our problems? What about the threat of socialized medicine, the increasing number of mal-practice suits, the occasional criticism, all too frequently hurled at us?

Have we become cold and impersonal in the rush of our practice? Have we forgotten the close bonds which should exist between patient and physician? Do we forget the human side and all too often deal with the patient as some sort of machine with no feelings or emotions?

Urgent House Call

Have we become too busy in our offices to make that urgent house call? Is it easier in this day of modern transportation to tell the patient to meet us at the hospital emergency room instead of the more personal atmosphere of their home? Are we too busy or too disinterested to participate in a public relations program? Have we become apathetic about everything, but making a living for ourselves? I do not make these comments as statements of fact, but simply raise them as questions, realizing that the doctor has become increasingly busy now that people are as close to him as their telephone, have we given the patient better diagnosis, finer treatment and more expert overall care at the sacrifice of close personal relationship?

I realize too, that it is difficult to feel relaxed at any moment. Because of his busy practice the doctor's reading time is cut short. He has all too little time with his family and the weight of many responsibilities concerning life and death leave him preoccupied and many times silent and uninteresting company for those who wait about the supper table for him.

Books Written

Books are written with such titles as "The Doctor has Three Faces," and he is described by this author as someone who is known to his family as a "ring of the phone, a stir in the hall and a slamming door." Through all this has part of our traditionally close doctor-patient relationship been lost? Has the revered place of the doctor in the home slipped to that cold impersonal level, I asked about earlier? Again, I reiterate that I do not make these remarks as statements of fact, but rather pose them as questions. Has this happened?

The increasing masses of population have increased problems of office and hospital care. The rapidly increasing cost of living and the problem of inflation has skyrocketed the cost of hospital care and increased office overhead; and we have been accused of over-charging or raising prices, although a review of doctors fees will reveal them to be only insignificantly increased over 1940 since which time the cost of living has increased over one-hundred per cent.

Many Accusations

We have been accused of inability to properly care for the needy, and it is charged that our hospital expenses have been so great they are out of reach of the average family and over our heads has consequently been hung the challenge of socialized medicine which many vote-hungry politicians hold out to a public, uneducated in the pitfalls of "government medicine," like a juicy plum which unthinkingly they construe as something for nothing.

In answer to the challenge, voluntary medical insurance has been a partial answer to our problem, and many plans have been pondered and discarded only to be reconsidered and again discarded, in search for a more satisfactory answer. An active public relations program has been instituted, lead by the A. M. A. and filtered down to our local societies. We are encouraged to discuss more freely with patients our fees and our diagnoses and out of all these problems which have been mentioned, have come many definitions of today's physicians.

Physician-Citizen

Dr. Elmer Hess, in a recent address said, "The physician must not only have the narrow concept that he is a physician but the all important concept that he is a physician-citizen with all the obligations and responsibilities that go with it." "He must put service before remuneration, he must have a strong faith in spiritual values, he must take an active interest in all educational programs within the community and should be active in the chamber of commerce."

Governor Arthur B. Langlie said in his address to the mid-winter A. M. A. session in Seattle, "We are living in a sick world and doctors must take time to contemplate the broader face of problems that plague this country and the world." In his presidential address before the North Central Medical

(Continued on page 433)

PHOTO REPORT
on the
75th ANNUAL MEETING
of the
NEW MEXICO MEDICAL SOCIETY
in Santa Fe, May 15-18

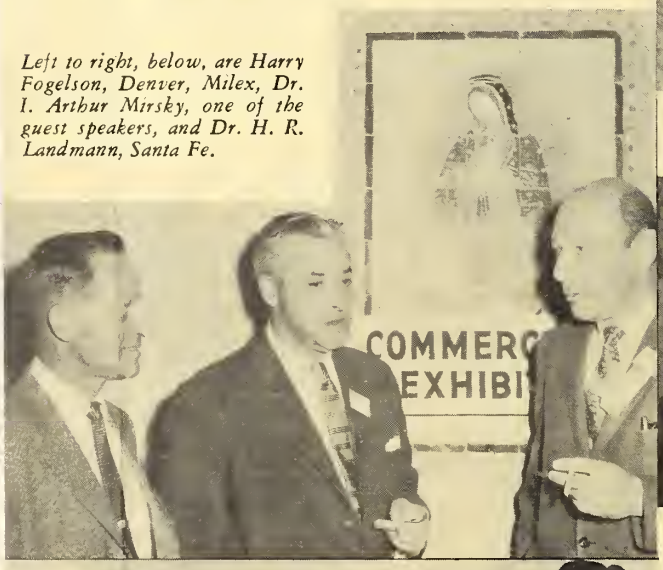
This is the art gallery of the Museum of New Mexico, where sessions of the annual meeting were held.

Left to right Dr. Junius Evans, Las Vegas, Ralph Marshall, Albuquerque, Executive Secretary of the Society, and Dr. Louis M. Overton, Albuquerque, new Vice-President.

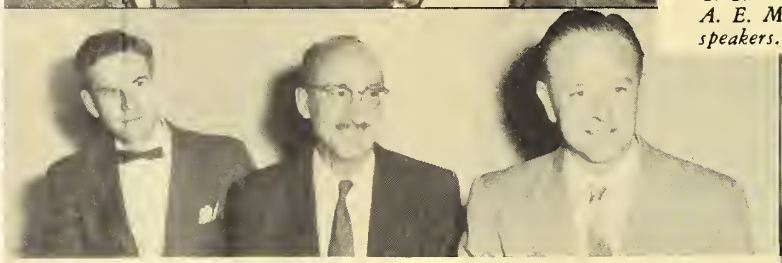
Left to right are Dr. Charles Montgomery, Roswell, Dr. C. M. Thomp Albuquerque, and Dr. John Craven, Odessa.

Left to right are Dr. P. G. Cornish, Albuquerque, Dr. William W. K baugh, Albuquerque, and Dr. William P. Longmire, one of the guest spea at the New Mexico Chapter meeting of the American College of Surgeo

Left to right, below, are Harry Fogelson, Denver, Milex, Dr. I. Arthur Mirsky, one of the guest speakers, and Dr. H. R. Landmann, Santa Fe.



Left to right at the Radiologist and Pathologist luncheon meeting a C. C. Lushbaugh, Los Alamos, retiring Secretary-Treasurer of the grou A. E. Margulis, Santa Fe, and Dr. Lauren V. Ackerman, one of the speakers.



Left to right are Dr. Miles Johnson, Albuquerque, Secretary of the New Mexico Orthopaedic Society, Dr. Myron Rosenbaum, Albuquerque, President of the New Mexico Orthopaedic Society, and Dr. James Miles, Denver, guest speaker, who spoke at the Society's luncheon.

Left to right are Dr. Marcus Smith, Santa Fe, Dr. Murray. M. Friedman, Santa Fe, and Dr. A. W. Egenhofer, Santa Fe.

Left to right are Dr. S. Heinemann, Carlsbad, Mrs. Wyloge, Santa Fe, and Dr. J. F. Haynes, Carlsbad, in one many charming corners of the La Fonda Hotel, headquart the meeting.

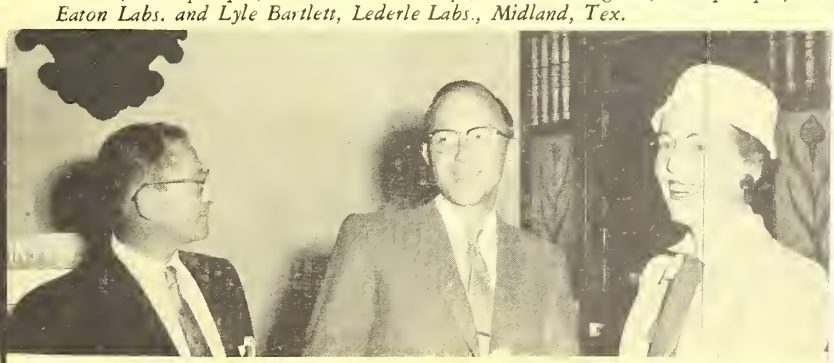
o right are Mrs. Bert Kempers, Albuquerque, new President of lew Mexico Medical Society Auxiliary, Mrs. Brian Moynahan, Fe, outgoing Recording Secretary of the State Auxiliary, and Robert Boice, Roswell.

Left to right are Mrs. George Garrison, Oklahoma City, Director of the National Auxiliary of the American Medical Association, Mrs. Howard M. Seitz, Santa Fe, President of the Santa Fe County Medical Society Auxiliary, and Mrs. F. R. Brown, Roswell, outgoing Treasurer and Corresponding Secretary of the State Auxiliary.

to right are Seth K. Hofmann Albuquerque, Park Davis Co., Dr. Zigmund W. Kosicki, El Paso, and Keith eim, Denver, Park Davis and Co.

Left to right are George Howell, El Paso, Meade Johnson and Co., John H. Arnold, Albuquerque, U. S. Vitamin Corp., Tom McLaughlin, Albuquerque, Eaton Labs. and Lyle Bartlett, Lederle Labs., Midland, Tex.

to right are Doug Spencer, Albuquerque, Ciba, Bill wski, Denver, Ciba, and Mrs. A. J. Jenson, Hobbs, N. M.



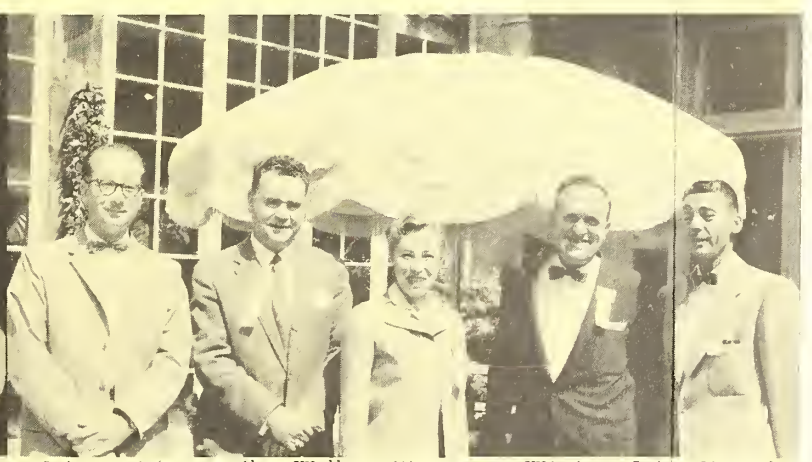
Left to right Stan Kasprzycki, San Gabriel, Calif., Desitin Chemical Co., Dr. Homer Musgrave, Albuquerque, and Mrs. Oscar Syme, Albuquerque.

C. Housen (left) Albuquerque, A. H. s Co., Inc., and Dr. H. M. Gibson, El

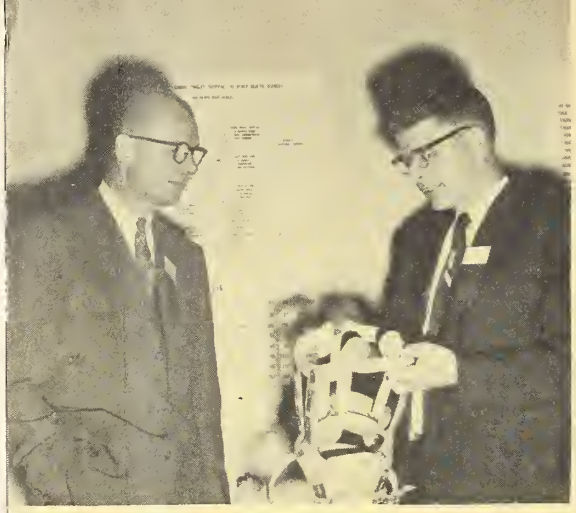
Tom Washington, Albuquerque, J. B. Roerig and Co. (left), and Dr. R. F. Crane, Portales, N. M.

Dr. R. H. Weaver, (left) Los Alamos and Bob Gregory, Albuquerque, G. D. Searle and Co.

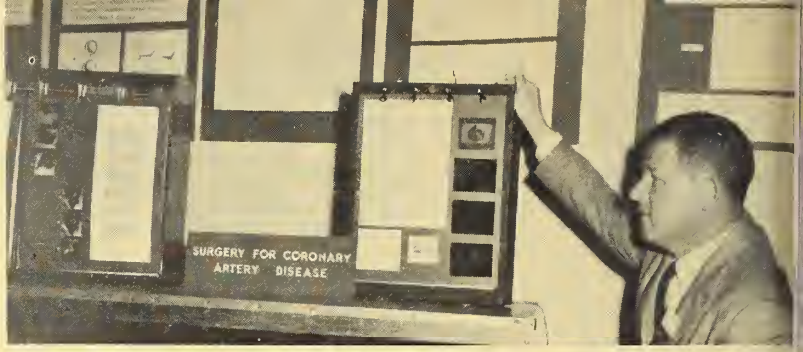
to right are Sonny Wright, Albuquerque, E. R. Squibb Sons, and Drs. Leonard Seidenberg, Albuquerque. Both he Seidenbergs are physicians.



Left to right are Alex Walker, Albuquerque, Winthrop Labs., Howard Clemens, Ft. Worth, Alcon Labs. Inc., Mrs. Harry Fogelson, Denver, Milex Co., Dick Carruthers, Albuquerque, William S. Merrill Co., and Leon Mhoon, Albuquerque, Merke Sharp and Dohme.



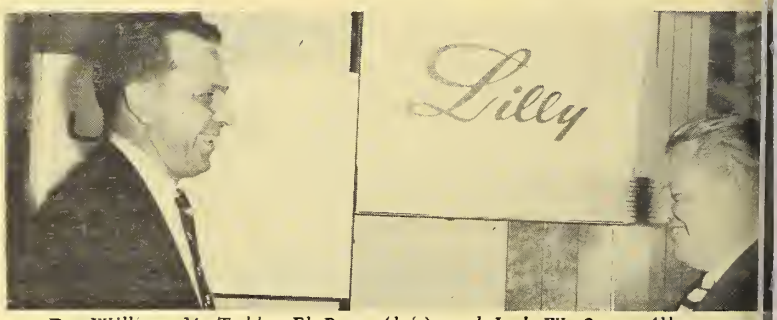
Dr. J. Robert Willson of Philadelphia, one of the speakers, looks over an exhibit, presented by Carrie Tingley Hospital, as shown by Dr. Eugene Chapman of Carrie Tingley Hospital at Truth or Consequences, N. M.



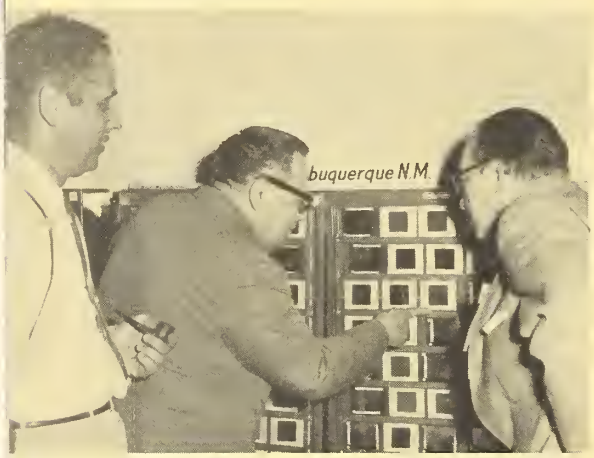
Dr. E. V. Kompaniez of Temple Hospital in Beverley Hills views a scienti exhibit which he brought from California. Dr. V. P. Satinsky, who participat in the preparation of the exhibit, did not attend the meeting.

Pat Kilbane, Phoenix, Organon, Inc., (left) and Mrs. Elaine Swanson, R. Santa Fe.

Dr. J. L. McCrory, Santa Fe, (left) and Stanley Greenwell, Albuquerque, Schering, Corp.

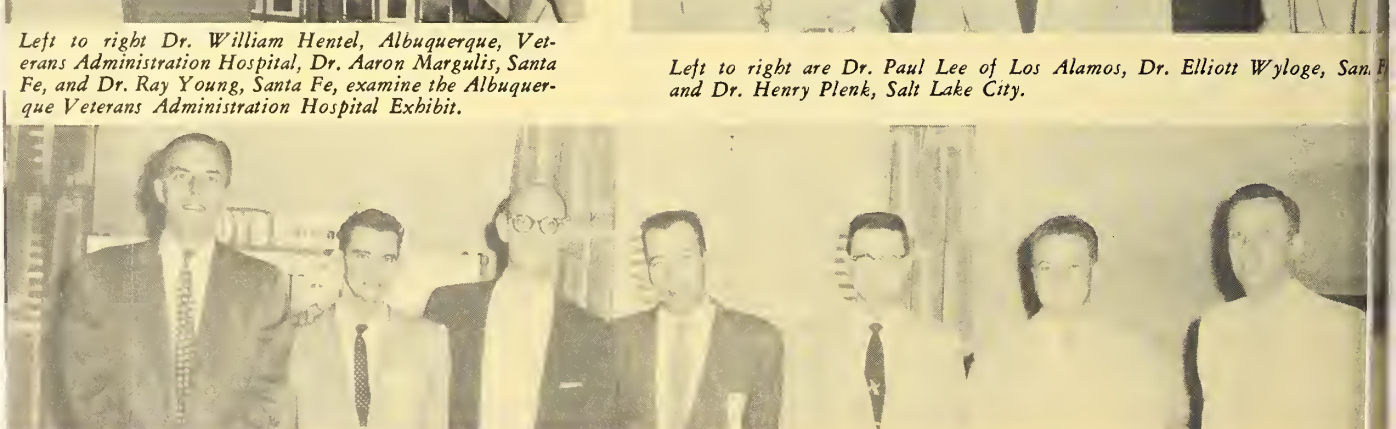


Dr. William M. Tubbs, El Paso, (left) and Jack W. Scott, Albuquerque Lilly and Co.



Left to right Dr. William Hentel, Albuquerque, Veterans Administration Hospital, Dr. Aaron Margulis, Santa Fe, and Dr. Ray Young, Santa Fe, examine the Albuquerque Veterans Administration Hospital Exhibit.

Left to right are Dr. Paul Lee of Los Alamos, Dr. Elliott Wyloge, San. F and Dr. Henry Plenk, Salt Lake City.



Left to right are A. E. Peterson, Ayerst Laboratories, Joe Bryan, Albuquerque, Pfizer Laboratories, R. L. Hyer, El Paso, Winthrop Laborato Jack Ulrich, Dallas, Lloyd Bros., Inc., Ted C. Sanderson, Albuquerque, WarnerChilcott, Inc., Les La Fortune, Albuquerque, Upjohn Co., Charles Singletary, Albuquerque, New Mexico Chemical and Surgical Co.

Conference, Dr. P. H. Woutat of Grand Forks, N. D., in a long 500 word definition of a modern physician entitled, "Counsel of Perfection," had this to say, "The ideal physician must, of course, be of fine and scholarly appearance, have great intellectual capacity and faultless personal habits, and inspire the confidence of his patient and the respect of all others. He must be active in local and state medical societies, attend meetings regularly and accept officership and committee assignments eagerly and perform his duties quickly and with great tact and diplomacy." He went on to say, "He must be a good family-man and he must have a wife who is gracious and tactful and who abhors mink coats and other vulgar extravagances. He must spend lots of time at home with his children."

Answer to Challenge

What then is our answer to the challenge of socialized medicine and our changing environment? In the words of Dr. Murray, A. M. A. president, "Today the Medical Profession along with business and industry is caught between those who desire to promote sound government and those who desire even more intensely to perpetuate party power. Unfortunately in recent years a benevolent Federal Government appears more attractive to the voting public than the preservation of individual freedom."

In this respect we have met rebuffs but in our philosophy of life, I think we would find Browning's word a stimulation:

Then welcome each rebuff
That turns earth's smoothness rough
Each sting that bids nor set nor stand but go

Profound Words

Some fifty-four years ago on Jan. 6, 1903, Sir William Osler spoke profound words before the New Haven Medical Association. These words seem to me to remain quite applicable today, "For better or worse there are few occupations more satisfying than the practice of medicine, if man can but once get oriented and bring to it the philosophy of honest work, the philosophy which insists that we are here not to get all we can out of life about us but to see how much we can add to it. The discontent and grumblings which one hears have their source in the man more often than in his environment — but let me say this of the public — it is rarely responsible for the failures of the profession."

Example and Conduct

The first part of our answer lies within each one of us individually. By our example and conduct we can make each person feel that he wants to continue the freedom of choice of a doctor and that freedom of conduct within the medical profession is maintained, and that this is the only real way. Let us dedicate ourselves to this task.

Dr. Murray in his November speech said, "If I had just one wish for the coming year, it would be to command the time and talents of the 160,000 physicians in the AMA. I would set us all to the task of re-emphasizing the absolute necessity of patient and professional freedom. Let us never reduce the quality of service we render to our patients and never lose the personal touch in medicine. Where there is any opportunity to improve upon our medical care, let us seize it and show our abilities to do an outstanding job. Satisfied patient-customers will give us deserving support when we need it."

Organized Strength

Certainly our first line of defense is our individual attitude and conduct but that alone is not enough. We are combating organized politics and more highly organized party groups who are vote and power conscious. We too must use our organized strength. In November of last year, I had the pleasure of attending the mid-winter AMA as a representative of this group. My function was purely that of an onlooker, but I was impressed by the unselfish purpose of the men I saw in action there. I was impressed by their desire to maintain freedom of choice of physician and freedom in the conduct of medical practice. I was more impressed by their consideration of the patient, his emotions, his dignity and his protection. I was most impressed by their unselfish giving of time and effort to achieve the ideals of our profession.

I realize that a physician's livelihood is dependent on him alone and he pays dearly for the time he spends away from an active practice. It therefore becomes easy for the younger man to say, "I cannot afford the time away from practice" and the older man to say "I have done my part, let someone else do it." It will take the wholehearted effort of us all. We cannot become apathetic.

Halls of Congress

It has been said that we must remember too that the destiny of medicine can be determined to a large degree in the halls of congress which behooves us to take an even greater interest in those who elect the congressmen. Sympathetic understanding of our position by federal legislators through the voting public will be an insurmountable deterrent to the forces supporting state medicine.

Governor Howard Pyle, administrative assistant to the President said last year before the annual meeting of State Society Presidents, "Those with whom you do not agree will be arguing for things. Be prepared to do likewise or risk fatal failure. Be prepared to take the initiative with wiser and better plans. There is little percentage in coming from behind in areas where we know there is going to be a constant and continuing pressure as the years and days go on."

Initiative

If we are to see freedom of choice of physician

and medical conduct survive, if we are to stave off the inroads of socialized medicine with its federal control and high administrative costs, we cannot wait for an attack and then counterattack — we must take the initiative and must provide able and successful leadership in this direction.

Basically, the answer to the problem lies in each of us as individuals for it is the close relationship between the patient and his doctor which in the final analysis will be the foundation for the continuation of our present system of medical practice.

Along these lines, I should like to set these several goals for the coming year. First of all, I should like to see our state and local public relations programs expanded. I feel that our public relations committee has done an excellent job in the past year. I do not think the response from the members of the society was as good as it should have been, but that nevertheless does not detract from the sincerity of the committee.

I should like to see the public relations committees of the local societies work more closely with our state committee and express more fully their ideas and desires. I should like to see the initiation and active promotion of indoctrination programs of a more intense and thorough nature in all county societies.

County Level

This I do not think is a final function of your state society, but something which should be handled on the level of the county society, to meet the local needs. One of our own members, Dr. Babey, from Las Cruces, has very ably outlined this problem in the March, 1957 publication of *Southwestern Medicine,* and I refer that article to you as very good reading.

I should like to see all of us rededicate ourselves to the ethics of our profession and to reemphasize in our minds the spiritual values which Dr. Hess so definitely brought out, for without these spiritual values the service which we render will be cold and meaningless.

In order for us to function efficiently as a state society, certain committees are necessary. Many of you have already been approached concerning these committees. Many of you have been asked to serve again. Your personal influence and ideas are absolutely necessary to the continued success of these committees. Some new faces will appear because we think your experience and talents are needed. I ask your help and sincere cooperation in attempting to accomplish the task we have set out to do.

Quotation

In closing I should like to quote again from Gov. Pyle's address. He ably illustrates the situation in the historical cycle of other peoples in other times.

The rise has been
From bondage to spiritual faith
From spiritual faith to courage
From courage to freedom
From freedom to abundance
Then comes the warning—
From abundance to selfishness
From selfishness to apathy
From apathy to dependancy
From dependancy back to bondage
Where are we in relation to the Cycle?

Clinical Note from Grand Rounds

These notes are abstracts of opinions expressed to staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital, chapter) in Phoenix, Arizona.

In recent years it has been recognized that there are patients with bleeding disorders characterized by prolongation of the coagulation time, yet who do not have hemophilia. The addition of hemophilic blood in vitro will cause it to clot. Those patients have deficiencies of other factors normally present in plasma, plasma thromboplastic component (PTC) or plasma thromboplastic antecedent (PTA). These also may be hereditary defects. Antihemophilic globulin is not effective in controlling the bleeding. Whole blood or plasma is usually necessary as in hemophilia.

Guest Speakers for Southwestern Medical Association Meeting Announced

Nine distinguished guest speakers, who will address the Southwestern Medical Association meeting in El Paso October 9, 10 and 11, 1957, have been announced by Dr. Celso C. Stapp, President of the Association. They are as follows:

Surgery

Oscar Creech, Jr., M. D.
Professor of Surgery, Tulane University, New Orleans, La.

Medicine

William Parsons, M. D.
Professor of Internal Medicine, University of Virginia School of Medicine, Charlottesville, Va.

General Practice

J. S. DeTar, M. D.
President, American Academy of General Practice, Milan, Mich.

Pathology

E. E. Muirhead, M. D.
Professor of Pathology, University of Texas Southwestern Medical School, Dallas, Texas.

Orthopedic Surgery

Frederick C. Bost, M. D.
Clinical Professor of Orthopedic Surgery, University of California School of Medicine, San Francisco, Calif.

Obstetrics and Gynecology

Edward A. Banner, M. D.
Assistant Professor of Obstetrics and Gynecology, Mayo Clinic, Rochester, Minn.

Ophthalmology

Phillip Thygeson, M. D.
Clinical Professor of Ophthalmology, University of California School of Medicine, San Francisco, Calif.

Anesthesiology

Robert A. Hingson, M. D.
Professor of Anesthesiology, Western Reserve University School of Medicine, Cleveland, Ohio.

Otolaryngology

Howard P. House, M. D.
Professor of Otolaryngology, University of Southern California School of Medicine, Los Angeles, Calif.

Headquarters for the meeting will be in the Hotel Paso del Norte in El Paso.

El Paso Doctor Named to Dermatology Section of AMA

Dr. Leslie M. Smith of El Paso was named Vice-Chairman of the Section on Dermatology of the American Medical Association at the Association's annual meeting in New York City.

Typical Doctor Works Sixty Hours A Week, Magazine's Survey Shows

"For every eight hours the typical American works, the typical physician devotes twelve hours to the practice of medicine."

So reports *Medical Economics*. The magazine bases its report on a survey of the doctor's economic status.

"Whether the doctor practices alone, in partnership, or in a group, his working hours are about the same. Nor do they vary much by income, region, or years in practice."

"But working hours do vary according to field of practice, size of community, and number of patients seen daily. For example, the typical G. P. puts in about an hour more a day than the typical specialist.

Dermatologists generally work the shortest medical week: some forty-two hours. Neurosurgeons, on the other hand, generally put in the longest week: sixty-six hours.

Typical general surgeons, internists, pediatricians, and general practitioners work sixty hours a week.

Coming Meetings

First American Congress of Legal Medicine and Law-Science Problems to be Conducted by the Law-Science Institute of the University of Texas at the Hotel Morrison, Chicago, July 8 - 20.

Postgraduate Medical Assembly of South Texas, 23rd Annual Meeting, The Shamrock Hilton, Houston, July 15-17.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, in El Paso.

Texas Surgical Society, El Paso, April 7 & 8, 1958.

Fifth International Congress of Internal Medicine, Sheraton Hotel, Philadelphia, April 24-26, 1958.

THE PRESIDENT'S COLUMN

The Medical Political Problem

By Celso C. Stapp, M. D., El Paso

Do we as doctors really know what is happening in our professional politics? It is actually quite surprising how well we have done when we survey the situation and find how few have been really diligent in medical politics and how few are active in the medical community.

The dedication of these few, who have been carrying the load, has been phenomenal in most instances. By the same token it is appalling how many pay nothing more than lip service to what is being done. Most of this is in the form of complaint. It is high time that we all become more diligent and put our shoulders to the wheel and help.

Too Many Meetings

Granted we have too many meetings to attend and that some are not worth going to. That is our own fault and we should correct it. In any community of over fifty thousand population there are quite a few medical meetings that are very poorly attended.

Our county medical societies suffer the most as there is no compulsion to attend, whereas the attendance at staff meetings at the hospitals have penalties for absence. The county medical societies should have the best attended meetings as they represent home rule in medicine.

This should be the forum for debate of not only medical political problems but also scientific and economic problems. The county medical society should be the body to direct and instruct delegates to state and national medical association meetings.

Scientific Meetings

The best meetings that may be attended are those of a purely scientific nature on a regional and specialty organizational basis. Such is our own Southwestern Medical Association meeting. These Southwestern meetings are wonderful and from them we learn a great deal; but they do not deal with the responsibilities of directing the policies and ethics of the profession.

Within our network of local medical organizations we also have many committee meetings. Some of these are scheduled merely to look good on paper. The first of the year I missed a committee meeting but received a formal set of minutes of the meeting which in part stated, "A general discussion was held and no conclusions were reached."

For Three Years

I am sure that this was true because for the past three years the same thing has happened. The fact that the committee exists looks good on paper but it is certainly worthless. A full list of such meetings should be reviewed locally and the useless ones abolished and the worthwhile consolidated into a truly functional organization.

Too many hospital staffs are trying to do the job of the county medical societies. Some of this is done in the name of staying accredited. We can tame the accreditation monster if we do the job locally in the county medical society.

This is our profession and we should maintain it at proper high and dignified level commanding the respect of the community as a whole. This will take effort from all of us and the results will be gratifying to all. Those who have been so dedicated to doing the job for us would be the first to rejoice.

OBSTETRICS

Obstetric Oxygenation: Valuable Routine Especially During Forceps Assistance

Dunlap, J. C., Texas State J. M. 52:806, 1956

To prevent intrapartum anoxia, believed responsible for most complications in newborn infants, 100 per cent oxygen was administered to 799 unselected patients before and during delivery of 791 single infants and 8 pairs of twins. There were no maternal deaths, no "failed forceps" and no Cesarean sections after engagement occurred. In 63 deliveries assisted by mid-forceps there was neither mortality nor morbidity.

Clinical Clippings, March, 1957.

ORIGINAL ARTICLES

Factors in the Development of Peritonitis*

By James H. Clements, 1st. Lt., M. C., William Beaumont Army Hospital, El Paso

The peritoneum, a smooth, thin, lustrous, translucent membrane invests the abdominal viscera and lines the abdomen, the largest cavity of the body.

The surface area is equal approximately to that of the skin and is considered in many respects to be an independent organ. The folds, bands, spaces and fossae of the peritoneum act as a channeling mechanism in many pathologic states, particularly peritonitis or inflammation of the peritoneum.

Although primary disease of the peritoneum is rare, there are only a few intra-abdominal diseases in which the peritoneum does not play a part. This structure is held in great respect in early diagnosis of intra-abdominal disease in order that ominous peritoneal signs indicating disaster may be averted.

Adequate Blood

The peritoneum is provided with an extra-ordinarily adequate blood supply from the branches of the abdominal aorta with venous return by way of the inferior vena cava. Abundant lymphatics of the peritoneum find their way to the thoracic duct by way of abdominal, diaphragmatic and mediastinal lymph nodes.

Nerve supply to the visceral peritoneum is maintained by the parasympathetic or vagus nerves and by its antagonist system the sympathetic nerves. The parietal peritoneum receives its nerve supply through the lower intercostal and lumbar spinal nerves, not to exclude the phrenic nerve which supplies the central diaphragmatic peritoneum.

Although the concept of peritoneal stoma has been discarded, the surface layer of flat polygonal cells that line the peritoneum are considered in many quarters to be cells of the reticulo-endothelial system and have truly remarkable barrier and scavenger functions.

Remarkable Capacity

The physiology of the peritoneum is intimately related to its anatomic make-up. Its remarkable capacity to handle insult must be credited to its ability for absorption, disposal of foreign invaders, nervous reaction to stimuli, and intrinsic potential for repair.

The almost frictionless surface of the abdominal viscera is bathed with a yellowish fluid containing a leukocyte count of approximately 2,300 of which about 45 per cent are histiocytes with the remainder being made up of basophils, eosinophils, and lymphocytes. Only a few neutrophils are present in these few cubic centimeters of fluid except in disease when the entire picture is changed.

The normal peritoneum in experimental animals will absorb as much as 8 per cent of their body weight in fluid in one hour. Poisons introduced intra-peritoneally are almost as rapidly fatal as if they were introduced intravenously. Although the peritoneum ordinarily obeys the laws of osmosis and diffusion, it is also known to act as a selective semi-permeable membrane that is controlled by intricate cellular enzyme systems and the relative electrical charges of particles.

The rate of absorption is increased with isotonic solutions, temperatures approaching that of the body and increased peristalsis. The rate of absorption of gases is relatively rapid for the first few hours after introduction and then decreases to a point that becomes almost imperceptible.

Foreign Invaders

Particulate matter, bacteria, and blood, acting as foreign invaders upon the peritoneal reticulo-endothelial surface meet with forceable mechanisms for removal. These include cellular phagocytic transfer into lymphatic channels, active phagocytosis by the living cells themselves, and impaction of particles between one or more cells.

This process is thought to be enhanced by the production of relative positive and negative pressures through action of the diaphragm and anterior abdominal musculature acting somewhat similar to a pump of the lymphatic plexuses. Other lesser influences on this process can be enumerated as: contractility of heart musculature, heart rate, tissue turgor, lymphatic vessel integrity, amount of peristalsis, and type of respiration.

There appears to be a definite increment in this removal process as the diaphragm is approached which was, of course, early reasoning for the beneficial effects of the Fowler's position which was used to allay absorption of toxins.

Certainly this position can be defended from an anatomical standpoint, whereby gravitation of toxins producing inflammatory suppurative processes are directed to a more therapeutically efficacious site.

*From Symposium on Surgery in Acute Trauma delivered at William Beaumont Army Hospital.

Localization of Pain

The localization of pain by mechanical, chemical or electrical stimulation of parietal and diaphragmatic peritoneum usually produces pain as follows: Stimulation of the central region of the diaphragm produces pain in the neck and shoulders; whereas, stimulation of the peripheral region produces pain in the lower costal or upper abdominal areas.

Stimulation of the anterior parietal peritoneum produces pain on the surface of the abdominal wall within an inch of the point stimulated. The anterior and lateral portion of the peritoneum has a much more dense nerve supply than the median portion of the posterior abdominal wall and the pelvic peritoneum.

The reaction of the visceral peritoneum to painful stimuli is much more obscure. Burning, cutting and crushing of this membrane produces only slight pain or none at all; however, distention of the visceral peritoneum by concommittent distention of the intestinal lumen produces a severe dull pain in the periumbilical and/or midabdominal region if the small bowel is involved and in the lower abdominal region if the large bowel is involved.

Pain reflex pathways have not been mentioned, but certainly they must have a large part in the production of shock, tachycardia, bradycardia, apnea, hyperpnea, vomiting, nausea, diarrhea, ileus, to mention a few that occur when peritoneal disease or rough peritoneal manipulation reacts unfavorably upon the respiratory, vasomotor, cardiac and other centra-nervous system centers.

Potential High

The intrinsic potential for peritoneal repair is gratifyingly high; however, since the rate of reparative processes vary in different individuals, it follows that any given peritoneal repair will necessarily be dependent on intrinsic influencing factors such as diet, vitamin sufficiency, age, nitrogen balance, mechanical and chemical stimuli for repair, etc.

There will always be extremes of response to injury, but the average individual will have complete epithelialization of the peritoneal surface taking place between the seventh and tenth day after injury.

This process, of course, is always altered by sepsis and/or chemical intestinal secretions and the virulence, rate, and duration of exposure to the peritoneum. It is likewise altered by the relative adequacy of the blood supply, presence of hemorrhage, degree of necrosis, and the amount of suppuration.

Decisive Factors

All of these previously mentioned anatomical and physiological factors have a decisive role in the development of every case of peritonitis. Clinical factors in the development of peritonitis are merely reflections of the pathologic effects of the anatomic and physiologic environment.

Peritonitis is the most common and serious insult that the peritoneum must encounter. Varied clinical manifestations of peritonitis makes classification of no practical prognostic or therapeutic value unless it is based on the etiology and extent of the pathologic process.

Etiologically a clear distinction must be made between septic, aseptic, and mixed peritonitis. Subclassification can be made as to the particular bacterial or chemical irritant involved.

The extent of the peritonitis may be placed in a diffuse or local classification. Both classifications can then be combined for a more explicit classification for example diffuse aseptic meconium peritonitis.

Acute, subacute and chronic may likewise be added for a more descriptive completeness.

Classification Discussed

A classification of peritonitis will not be attempted here; however, the following must be considered in a classification of peritonitis. Under the septic variety must be included all of the bacterial organisms that may cause peritonitis by virtue of perforation of a viscus, hematogenous dissemination, or traumatic entry into the peritoneum.

Under the aseptic variety must be included agents such as bile, blood, chyle, liquor of cysts, meconium, pancreatic secretion, talc and urine. Hasty addition should be made of the fact, however, that in the more severe forms sepsis usually eventuates at some course of the disease.

The mixed type of peritonitis may be any combination of aseptic and septic causes as for example are usually seen in bile peritonitis with secondary invasion by anerobic organisms from the liver.

Virulence Important

Virulence of the irritant in peritonitis is important clinically, because ordinarily the more irritating the cause, the more severe the illness and the sooner diagnostic symptoms and signs develop. This also has a definite effect on the reversibility of the process, which is usually dependent on the extent of necrosis of the peritoneum and abdominal viscera lined thereby.

The symptoms of peritonitis seen by the physician are likewise modified by the length of time lapsing between onset of the illness and consultation with the physician, whether or not a peritoneal insult has been diagnosed and time is being allowed for localization to occur, whether or not the peritonitis developed postoperatively, or whether or not it is a case seen for the first time in its terminal stages.

Symptoms and signs of peritonitis may be divided into two groups, the early and the late. The early

symptoms and signs are pain, vomiting, anxious facies, abdominal muscular rigidity, superficial hyperesthesia, collapse and temperature alteration. The late would include collapse, temperature alteration, distention, intestinal paresis, and general toxemia.

Early Symptoms

The early symptoms and signs appear much more promptly when the disease process affects that part of the peritoneum described previously as parietal. Early symptoms and signs are more likely to be definite in young, well nourished, well hydrated, and non-obese individuals in contra-distinction to elderly, debilitated, or obese patients, in whom the late stage may develop insidiously because early symptoms were so mild as to attract little attention.

By virtue of the less sensitive nerve supply to the visceral peritoneum, the pelvic parietal peritoneum and the median posterior parietal peritoneum more obscure early signs and symptoms are manifested. Disease in the most sensitive portions of the parietal peritoneum becomes obscure only when late changes render the nerve supply to these areas functionless.

Pain is Symptom

Pain remains, however, a constant early symptom of peritonitis and even after the irritant has become diffuse, local tenderness can usually be appreciated in the area of greatest peritoneal soiling.

Vomiting is a more frequent occurrence at the onset of peritonitis if the proximal portion of the gastrointestinal tract is involved; however, diarrhea is many times seen in peritonitis involving the lower bowel.

Although the temperature in later stages of peritonitis may be subnormal, normal, or high, the temperature in earlier stages is usually elevated. The pulse rate in peritonitis is usually elevated in the earlier course of the disease whether the patient is febrile or not; however, in advanced disease a weak, thready pulse or "pulsus abdominalis" is apparent which may be irregular.

Early collapse in peritonitis is usually reversible; however, this is rarely so in the advanced case. As peritonitis progresses throughout the peritoneal surface ileus with distention becomes more and more apparent and no longer acts as a local protective process.

Muscular Rigidity

The degree and extent of muscular rigidity seen in peritonitis depends on the virulence of the insult and how widely distributed it may be throughout the peritoneal surface. The patient is likely to lie motionless in bed, with the legs flexed in order to relax abdominal muscle tension.

Tenderness is an almost constant finding except in late disease when it may have disappeared. The facies may be drawn and pallid, but typical hippocratic facies with sunken eyes, pinched nose, and apprehensive stare only accompanies the late collapse state.

In developing peritonitis, as an exudate begins to appear containing serum, fibrin and cells, a leukocytosis of the blood picture begins to appear. This leukocytosis varies with the cause and severity of the disease and may run from 12,000 to 50,000; however, a preponderance of polymorphonuclear forms are usually present. This response like the many others is dependent on the patient's age, debrility, and reaction to injury.

It again is closely related to virulence of insult versus defense mechanism. With formation of the peritoneal exudate fibrin deposition on the border of the lesion which acts to cement contiguous structures together tends to act as a limiting barrier to the spread of disease. Organization of this fibrin barrier acts to seal off toxic products from absorption and to, in effect, extraperitonealize the lesion.

Safe Beginning

A safe beginning in any case of developing peritonitis is to make an early diagnosis of its presence whether the exact pathogenesis of the developing disease can be elucidated or not at that particular time.

The diagnosis must be suspected before it can be arrived at early enough for optimum advantage to be taken of the "organ's unique anatomy and physiology."

Complete understanding of the development of peritonitis in the average individual and those at both extremes of life give the physician an opportunity for an early diagnosis of early disease.

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BOOKS

Epileptic Seizure

Edited by John R. Green, M. D., and Harry F. Steelman, M. D., Neurological Surgeons; Co-Directors of Seizure Clinics at St. Joseph's Hospital and the Arizona State Hospital, Phoenix

This symposium presents the latest information on every aspect of epilepsy — historical, diagnostic, therapeutic, educational, employment. Emphasis is on the epileptic as a whole, a person with a disease rather than a diseased person.

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MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

April 18, 1957

F. P. Bornstein, M.D. – Editor – Case No. 787

Presentation of case by Dr. W. R. Gaddis

History — Dr. Nathan Kleban:

A 52-year-old Anglo-American merchant entered the hospital on January 13, 1957 and died on January 19.

At 3:00 a. m. the patient wakened, vomited dark, later bright red, blood, passed several black stools, entered the hospital seven hours later.

X-ray examination of the upper gastro-intestinal tract with negative findings was performed 10 years before because of nausea. The patient had consumed excessive amounts of alcohol until six years ago, when he began to be troubled by arthritis. Prednisone was required to control joint symptoms in order that he could continue working.

Physical Examination:

The patient appeared pale and chronically ill. T. 99.2, P. 80. R. 20, B. P. 114/64. There were dental caries. Slight tenderness to palpation was elicited in the epigastric and umbilical regions. There were "deformities of fingers, toes and some of the larger joints".

Hospital Course:

A Sippy diet and vitamin K were prescribed. During the first 36 hours there were five black stools. Rectal temperature rose to 105.6. A cut-down was required to begin the first of 12 units of whole blood. Additional medications included morphine, meperidine, vitamin K, oxide, oral gelfoam powder, potassium, Myamine, Phenobarbital, Sparine, ACTH, hydrocortisone, and Levophed.

It was evident that blood continued to leak from the gastro-intestinal tract faster than it could be replaced. Forty-eight hours after admission a medical consultant recommended surgical intervention. X-ray examination of the esophagus, stomach and duodenum twenty-four hours after admission yielded no positive information in an effort to localize the site of bleeding.

Rectal temperature rose to 105.4. After prolonged shock, despite blood and other medications, the patient died six days after admission.

Laboratory:

X-ray: Upper GI series January 14: Negative for evidence of location of bleeding point.

January 13: Hb. 8.9; Ht. 32 per cent

January 14: Urine 1.010 and otherwise negative; Hb. 9.1; Ht. 30 per cent; WBC 18,800; Segs. 82, Lymphs. 16, Monos. 2.

January 15: Hb. 9.2; Ht. 26 per cent; RBC 3.15; platelets 140,000; bleeding time 30 seconds; coagulation time 2 minutes 15 seconds; prothrombin time 15 seconds, 100 per cent.

Co_2 18.9 meq/L; Cl 94 meq/L; BUN 30 mg per cent; K+ 4.9 meq/L; Na 135 meq/2

VDRL negative.

January 16: Hb. 16.0; Ht. 50 per cent.

January 17: Hb. 13.8; Ht. 48 per cent.

Clinical Discussion — Dr. W. R. Gaddis:

This case is that of a 52-year-old male admitted to the hospital with a diagnosis of upper gastro-intestinal hemorrhage. Now, is this a medical or a surgical problem? In cases of this kind it is an impossibility for us to regiment our thinking and find a routine procedure or approach to any one of these problems.

It is an unsatisfactory solution of the problem to say that all patients who have upper GI hemorrhage will be treated solely on the medical service or on the surgical service, as it is an impossibility for us to state the factors that have produced the upper GI hemorrhage.

Shock Condition

When this man was seen he was in a condition of shock. He had a decreased hemoglobin and showed signs of continuing blood loss. Outstanding in this man's history and in his physical findings, in addition to shock, is the presence of a rheumatoid type arthritis involving the fingers particularly; other joints were also noted to have the typical deformities.

A history of having taken prednisone over some period of time was given. The exact length of time doesn't come to my memory at the present and the dosage of drug was not readily available, but it was believed to have been upward of 20 mg. daily.

Etiology

Now in considering GI hemorrhage, let us first discuss etiology. It is axiomatic in medicine before we can treat any disease intelligently, we should know what it is and what is causing it. This is particularly true in the subject of upper GI bleeding.

As to the source of the bleeding, we have to decide whether this is really upper GI bleeding, or does it come from the naso-pharynx or the associated regions. It not infrequently happens that patients will bleed rather excessively from the posterior naso-pharynx and swallow the blood and then regurgitate it.

Is it esophageal, and if so, why? That brings up the question of the possibility of a tumor in that particular organ. Or does this patient have varices that are bleeding? With these things in mind we began to consider the anatomical factors in the production of this man's bleeding.

In addition we have to consider the possibility of disturbed physiology of the blood clotting mechanism such as certain blood dyscrasias, particularly those of platelet and prothrombin deficiency, defects in clotting and bleeding time and reactions to drugs. About these we don't know a great deal in this man's case because we had no access to his therapeutic record.

Circulating Platelets

You will notice in the record that he had a lower quantity of total circulating platelets but it was the opinion of the hematologist that this was probably not the responsible cause for his bleeding. His prothrombin time was 100 per cent normal.

In approaching a discussion of whether bleeding should be treated medically or surgically, we have to determine in addition to the etiologic factors involved, the duration and severity of the bleeding.

In a great many institutions today it is the plan for a patient with upper GI bleeding to be admitted to the medical service and be treated medically. If the condition is fairly satisfactorily controlled within 24 to 48 hours, it is treated medically.

If it is shown that the patient is not benefitted, the surgeon is called to treat the moribund patient and may or may not have good results. It is my personal opinion that this is a joint problem and that such a patient who is admitted to a service, be it medicine or surgery, should be simultaneously examined by the medical and surgical services.

This was the case with this man. He was admitted and the surgical staff was consulted. In approaching a decision as to whether a patient shall be referred to the medical or surgical service primarily, much depends on whether one is able to pin-point anatomically the source of the hemorrhage.

In this particular instance we have no history except for one episode in the past when he had had some epigastric pain which subsided rather promptly. He had no premonitory GI symptoms that had given him any trouble, so that we were dealing with a problem of chronic ulceration of a peptic type of either the stomach or upper small intestine and duodenum.

We could not so determine from a historical standpoint. This patient refused steadfastly to admit to the usual symptoms of ulcer, but he continued to bleed nonetheless.

I was doing a little research recently on the subject of peptic ulceration in relationship to some other factors and ran across a discussion in the Annals of Surgery. One of the essayists made the statement that a surgeon who operates a patient for upper GI bleeding without having some very good idea of the source of the bleeding was not realistic and that a laparotomy was contra-indicated if the surgeon didn't have a pretty concrete idea about what he was going to treat inside the abdomen. How true this is I don't know.

The surgeon also is entitled to refuse to operate on a patient if the patient has a blood dyscrasia or some adverse reaction to drugs.

I think the surgeon should be reasonably certain of the source of the bleeding if it is at all possible for him to do so before he undertakes to approach the problem from a surgical standpoint.

I am sure that we are all aware of the cases, either in our own practice or in our immediate ken of knowledge, wherein the patients have been subjected to surgery and no source of bleeding was found and the patients continued to bleed and either got well or expired anyway.

X-ray Examination

An X-ray examination was done. At the time the X-ray examination was performed the patient was not in severe condition. The thinking of the internist who was treating him at the time was that he could tolerate an upper GI series, particularly since there had been no history of ulceration.

After a diligent look with fluoroscopy and search of the films after the time of the examination, Dr. Vincent M. Ravel reported that he was unable to demonstrate varices of the esophagus and secondly, he did not find any area of ulceration in the stomach or duodenum. Now these findings would serve to deter the most hardy individuals from being very fast in picking up the knife.

It was our opinion at the time that we should probably be a little more careful. Secondly, this patient gave the history of ingestion of steroid hormones for a considerable period of time.

We are all aware that steroid hormones do promote the formation of acid in the gastric secretion and that reactivation of old peptic ulcers or aggravation of new peptic ulcers, either in the gastric mucosa or duodenal portion, is not infrequently encountered.

We are dealing with a problem here that could well be related to ingestion of steroids and we have to answer the question, "will surgical approach to bleeding caused by steroids give us any help at all?".

Minute Ulcerations

Furthermore, since we are unable to pin-point even

the bare location of the bleeding, probably multiple bleeding points from minute ulcerations were present. I am expressing to you what my opinion was at the time I saw this patient.

It was the feeling of myself and some of the others who saw this patient that we were probably dealing with a problem of bleeding which was aggravated by the ingestion of steroid hormones and their adverse reaction on this individual and if we subjected him to surgery we most certainly would have a patient who was a candidate for a fatal result. If we did not operate, we felt he was probably going to expire.

However, at the time he was seen, it was certainly doubtful whether he could be put in proper condition to have any type of incision made and have him get off the table in any reasonable condition at all.

So, to sum up! At the time the man was seen here in the hospital, and I saw him both in the capacity of being on surgical service as well as on our Saturday morning rounds, this man was bleeding, probably from multiple sources, probably gastric ulcerations that were not visible to the radiologist since no particular bleeding point was demonstrated.

Therefore, we decided to defer surgery and attempt to stop this man's bleeding in some other way. I would like to open the case at this time for discussion. I will tell you that my opinion was at that time and is now, that this man had multiple gastric ulcerations which he bled from. It is known that it is not necessary to have frank ulceration to produce bleeding, that forms of hypertrophic gastritis will result in a rather marked amount of hemorrhage and can be fatal.

Dr. Antonio Dow:

It seems to me if we couldn't stop the bleeding in from 24 to 48 hours this man should have been explored. Any person over the age of 40 who bleeds over 48 hours, should have something more than medical treatment to stop it. The more you wait, the more irreversible his condition is going to become. I want to disagree with another statement the surgeon made. Many times there is bleeding in the upper GI tract and the radiologist can't demonstrate the ulcer; perhaps the ulcer is filled up with a clot, but the surgeon can go in there and do a sub-total and nine times out of ten will get the man out of trouble. I don't understand why he wouldn't operate.

Dr. F. P. Bornstein:

You said the surgeon can get the patient nine times out of ten out of trouble. At Saturday rounds when this case was discussed a great number of statistics were quoted and none of them was as optimistic as your statement.

Dr. Antonio Dow:

I am not talking about operating on a moribund patient. I am talking about getting the patient 24 hours after he starts to bleed, still no change, still bleeding; you are giving him blood and he is pouring it out again; he is at a stage where he is not irreversible and I think you can operate and get the bleeding stopped.

Dr. F. P. Bornstein:

I remember that discussion about GI hemorrhage treatment by sub-total gastrectomy. I don't know whether anybody can bear me out and I am not familiar with the statistics but I think it was about a 50-50 proposition.

Dr. Antonio Dow:

Fred, you may be right, but I think you can give them the best chance by giving them surgery. Well, if that is necessary, I say sub-total is usually what is required. Certainly if they haven't stopped bleeding after 48 hours of medical treatment I don't think you should wait any longer. Any chance this man may have had was in surgery.

Dr. Nathan Kleban:

I would like to make one or two comments. This is certainly not intended as criticism of the management. In reviewing the chart, at the time of admission the patient was in pretty good shape and apparently was in pretty good shape for about 36 hours.

During that first 36 hours it is recorded on the nurses' notes according to the information I have here on the protocol, on five different occasions he either had a black, black liquid or black tarry stool. I think several of these did occur apparently close to the time when it was found that he was in shock and a cut-down was done in order to start the first blood transfusion.

Of course the point is that all of us need to be quite alert to the bleeding which is going on. It may have reached a pretty serious state before it makes clinical manifestations. That is obviously what was happening to this man 12 hours or so after he came in.

His hemoglobin and hematocrit were about the same as they were on the day of admission. However, during the next 12 hours he did have warning black or tarry stools to indicate that he was going to get into trouble.

Apparently he had a hypochromic anemia at the time of admission. His hemoglobin seems to be disproportionately low as compared to the hematocrit, and I suspect this man had probably been losing a little occult blood over a period of time.

If the man had been bleeding slowly and to a small extent over a longer period of time than that caused by the acute illness, he would have had an iron deficiency anemia.

A point I would like to mention is the factor of ACTH and cortisone, hydrocortisone and now prednisone.

It is a well established fact that ACTH and the corticoids can increase gastric acidity and gastric pepsin to levels higher than are usually found in individuals with duodenal peptic ulcer.

That happens to be one of the complications one must take into consideration in using those medications. The third thing I would like to comment on is that one can appreciate Dr. Gaddis' position, finding absolutely no localization of the bleeding.

On the other hand it seems to me that reason is on Dr. Dow's side. I don't recall in detail what condition this man was in after he went into shock; I don't recall if he was really a good candidate for surgery after he initially went into shock. It seems to me that Dr. Dow is right.

In apparent upper GI bleeding, be it from the stomach or from the duodenum, if one can't control the bleeding with blood replacement or rather if it is apparent that bleeding is continuing despite medical management for 48 hours or 72 hours, it seems to be a reasonable theory that the individual must have surgery if he is going to survive.

Dr. Pablo Ayub:

I would like ot bring up something that has nothing to do with the GI bleeding but perhaps it has some thing to do with the differential diagnosis. This patient had rheumatoid arthritis apparently for about ten years and he received metacorten and all these steroids.

We have discussed cases in other hospitals in which the rheumatoid arthritis and the collagen diseases have been more or less lumped together and I am wondering whether in this particular case lupus erythematosus could have entered the picture.

This patient soon before he died had a fever of about 105 which could be consistent with a lupus erythematosus crisis. There is probably no question that the bleeding was the factor that brought on his death. I wonder whether any of the internists would care to comment on these collagen diseases.

Dr. W. R. Gaddis:

I would like to say that some of these things were discussed at the time this patient was seen, Pablo. Now of course one finds oneself in a very unenviable position as far as treatment is concerned with a patient of this type referred to him by someone else. I saw this man 48 hours after he was admitted to the hospital. At that time I didn't feel as though I could get him alive off the operating table and I didn't operate. However, at the time that this patient was discussed nobody was of the opinion that we could have done any good at all with surgery.

Clinical Diagnosis: Gastric hemorrhage and shock.

Dr. Gaddis' Diagnosis: Multiple punctate hemorrhages from upper GI tract.

Anatomical Diagnosis: Gastric hemorrhage; acute, diffuse, necrotizing gastritis; chronic arthritis.

Pathological Discussion — Dr. Bornstein:

On autopsy we found a slender, emaciated, elderly man measuring approximately 180 cm. in length and weighing approximately 65 kg. The most unusual findings on external examination consisted of the marked deformities of the hands which were of the type found in chronic arthritis.

The most significant abnormalities internally were found in the stomach. The stomach was distended and filled with hemorrhagic material, part of which formed a large blood clot.

The entire gastric mucosa was covered with a dirty brown, thick, necrotic membrane with numerous tiny erosions. There was no obvious ulceration. The remainder of the intestinal tract was intact and filled with clotted blood.

On microscopic examination it was seen that the mucosa of the stomach was destroyed by ulceration. The destructive process was diffuse. The sub-mucosa and muscle layer were covered with a thick, hemorrhagic and necrotic layer.

They were infiltrated with segmented granulocytes. In some places the necrotizing process extended into the muscle layer. Throughout the stomach there were numerous dilated arterioles and capillaries which obviously represented bleeding points. The entire exudate had a large admixture of red blood cells.

These anatomical findings show a rather typical picture of a necrotizing gastritis which produced a diffusely bleeding surface which was responsible for the fatal hemorrhage. I am convinced that again we are dealing here as in two previously reported cases, with a complication of steroid treatment.

Dr. Kleban:

I don't want to dispute the claim that the lesions here are due to cortisone; however, we should remember that this patient has been in shock for a long time and these patients are known to develop ulcerations of the stomach, so-called Curling's ulcer.

Dr. Bornstein:

I do not think that this consideration is applicable here. The lesions encountered in shock, for example, after severe burns, are sharply circumscribed, punched-out lesions, and are not as diffuse as in this autopsy.

Dr. Gilbert Landis:

How do you know in a patient with such extensive necrotizing lesions of the stomach that the patient did not attempt suicide?

Dr. Bornstein:

For a lesion of this magnitude to be suicidal in type, there are only two possibilities. First, the patient ingested a strong mineral acid or a lye. In this case the lesion would not be limited to the stomach exclusively but there would have been lesions in the oral mucosa and esophagus.

The second type of lesion would be that due to mercury poisoning, in which case in addition to the stomach lesions there should have been characteristic lesions in the kidney. These were absent in this case.

Dr. Woolston, Past President of Southwestern Medical Association, Dies in Albuquerque

Dr. William H. Woolston, prominent Albuquerque physician and surgeon, died May 10 in an Albuquerque hospital. He was 66.

Dr. Woolston suffered a heart attack and had appeared to be recovering. He rallied, then died unexpectedly.

Dr. Woolston, who had been practicing in Albuquerque since 1923, had come to New Mexico as a patient in ill health the year before. He recovered his health in Silver City before coming to Albuquerque.

The physician, former star football player at the University of Illinois, was born in Geneva, Ill., on January 18, 1891.

He received his bachelor's degree from the University of Illinois, where he was an outstanding football player, and captain of the team during his senior year.

Medical Degree

Dr. Woolston received his medical degree at Northwestern University, and served in France during World War I as an Army physician. After the war, he returned to Northwestern University to serve as an instructor in surgery from 1920 to 1922.

He was practicing in Chicago when ill health caused him to move to New Mexico.

Dr. Woolston was a Fellow of the American College of Surgeons. He was a member of the county and state medical societies. He was a Mason, and a former director of the Presbyterian Hospital in Albuquerque.

He also was a past president of the Southwestern Medical Association and a member of the American Medical Association and the American Academy of Medicine.

Charter Member

He was a charter member of the National Football Hall of Fame Foundation, and a member of the Sons of the American Revolution and Phi Delta Theta fraternity.

He is survived by his widow, who is a board member of the Los Lunas Hospital and Training School and who has been active in affairs of the Bernalillo County Humane Association.

Also surviving are a son, Timothy Woolston, attorney in Albuquerque; a brother, Dr. Wesley J. Woolston of Pasadena, Calif., and two grandchildren.

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Southwestern MEDICINE

VOL. XXXVIII AUGUST, 1957 No. 8

CURRENT THERAPY

Medical Treatment of Amoebiasis

By Frank C. Golding, M. D., El Paso

The treatment of amoebiasis is becoming more of a controversial problem, and one cannot be dogmatic in one's statements.

Treatment should be instituted with instructions for a bland, low-residue diet and excluding all alcohol.

Emetine hydrochloride given by hypodermic injection should be used in the treatment of intestinal amoebiasis only to control the symptoms of dysentery. This drug does not eradicate the infection. When given, it should be done under carefully controlled circumstances.

The patient should be at complete bed rest, with daily checks on pulse and blood pressure, and possibly electrocardiogram before each daily dose of emetine is given, and it should be discontinued as soon as the dysentery has been controlled.

Oral Medications

The usual treatment for the intestinal phase of amoebiasis, however, consists of oral medications only. The first and, I believe, the most effective of these is arsenic.

The first of the arsenical preparations used is carbarsone, an organic pentavalent arsenical readily absorbed by oral administration.

Milibis (Bismuth Glyconyl Arsanilate) is an almost insoluble compound containing 15 per cent of arsenic and 42 per cent of bismuth.

Balarsen (Arsthinol) is a trivalent compound developed for the treatment of Yaws. In treating patients with Yaws, it was noted that the patients who had amoebiasis were improved also in regard to the amoebiasis. The average dose recommended is 100 mgm tablet five times daily for five to seven days.

Second Group

The second most common group of drugs used for oral administration are the iodine drugs. Vioform or Chinofon were used extensively until Diodoquin was introduced, and this has become the most popular of the iodine drugs. It is an insoluble preparation containing 63.9 per cent iodine.

The use of antibiotics such as Aureomycin, Terramycin, Bacitracin, Neomycin, and Chloromycetin in the routine treatment of amoebiasis is mentioned only to be condemned.

First, the more conventional medications are equally, if not more, effective; secondly, the complications of these drugs are frequent and dangerous and can be even fatal; thirdly, there is the risk of establishing an idiosyncrasy to these drugs, thereby depriving the patient in the future of their use in other, perhaps more serious, diseases in which there is no alternative treatment.

Great Value

These drugs are of great value in the treatment of patients who are unable to tolerate arsenic or iodine preparations, or when the amoebiasis is associated with other infections such as bacillary dysentery in which these drugs are specific.

The one exception to this objection to the use of antibiotics is Fumagillin. This is an antibiotic that apparently has little use except in the treatment of amoebiasis.

The dose is two 10 mg. capsules t. i. d. for two weeks. This has been complicated in some cases by nausea and vomiting, which makes it necessary to discontinue the medication.

For completeness, it should be mentioned that Atabrin has also been used in the treatment of the intestinal phase of amoebiasis.

The use of sulphonamides or penicillin to combat secondary invaders has been of merit in some cases.

A more recent drug, Camoform (Biallyamicol Hydrochloride, Parke-Davis & Co.), is of great value in the treatment of amoebiasis. Similar to chloroquine,

*Dr. Golding this month is substituting for Dr. Jack A. Bernard, regular conductor of this section.

it is another anti-malarial drug and contains no arsenic or iodine.

Seventy to 80 per cent of it is absorbed, and 15 per cent of this can be demonstrated in the plasma three weeks after it is discontinued.

This suggests that the drug is largely localized in the tissues and offers promise that it may prove of value in extra-intestinal amoebiasis.

On two early reports that I have available, the first (1) shows 85 per cent apparent cures after seven days of treatment with 0.5 gram t.i.d.

The second [2] report showed 100 per cent apparent cures, but in these cases the treatment with 0.5 grams 3 or 4 times daily was continued in all cases until evidence of the disease had been eradicated, and in one case the treatment was prolonged for 25 days.

This seems to confirm my opinion as expressed below that more prolonged treatment for amoebiasis is necessary.

Larger Doses

A more recent report by Ross B. Taylor [3] indicates that larger doses of .750 grams q.i.d. for 10 days and repeated after a three or four weeks' interval may be necessary.

Winthrop is experimenting with another synthetic compound Win 5047 or Mantomide. This is a relatively non-expensive drug and contains no arsenic or iodine. It is poorly absorbed in the intestinal tract. Recommended daily dosage is one gram b.i.d. for 10 days.

Ciba also is experimenting with a new synthetic named BA11925C.

If there are localized lesions in the rectum, Vioform ointment locally has been used two or three times daily. Other forms of local rectal treatment that have been recommended are six grams Chiniofon dissolved in 300 cc. of warm water as a retention enema daily for seven to eight days; Carbarsone, two grams dissolved in 200 cc. of two per cent sodium bicarbonate solution as retention enema for five nights.

Hepatic Phase

Finally, treatment of the hepatic phase of amoebiasis must be considered. Even in asymptomatic cases, there is strong presumption that some amoebic organisms reach the liver.

Therefore, a course of treatment for the hepatic phase should be given, especially as we now have the relatively non-toxic drug Chloroquine (Aralen) for this purpose.

The dosage of Aralen is four .25 gram tablets daily for two days, then two tablets daily for three weeks. The usual custom is to start the Chloroquine at the onset of the amoebic treatment.

I also do this if there are any signs of hepatic involvement at the time of the original examination, but otherwise I prefer to wait until six or seven weeks of the intestinal treatment have been completed, and then I give this along with the intestinal medication.

In this way, there is less opportunity for re-infection of the liver after the Aralen has been discontinued.

Also Used

Emetine hydrochloride grains one for ten days is also used in the treatment of amoebic hepatitis or abscess.

What are the aims of treatment? First, the ideal is to effect a cure, but how often can this be accomplished? While we seem to cure many cases, and I believe we do so, there is never entire certainty.

If we consider how difficult at times it is to demonstrate the parasite in active, untreated cases of dysentery and compare how minimal is the possibility of demonstrating parasites in treated cases with a greatly reduced amoeba population, the dependence upon negative stool examinations for proof of cure obviously would be inadequate.

Because of this difficulty, I have discarded the stool examination after treatment, unless symptoms recur. The sigmoidoscopic examinations likewise are not very satisfactory, since many proven cases show no abnormality originally in the rectum and lower sigmoid.

These negative examinations tend to give the physician and patient a false sense of security, and, as a result, they may stop treatment too early.

Length of Treatment

As to the length of treatment to attempt a cure, the conventional treatment of one to three weeks, perhaps repeated in a short time, is, in my opinion, entirely inadequate.

I believe continuous treatment should be planned in units of months rather than weeks.

Until recently, I have advised a minimum of 10 weeks, consisting of a week of an arsenic preparation alternating with 10 days of a non-arsenic-containing drug such as diodoquin, camoform or Fumagillin, to avoid the hazards of accumulation of arsenic in the body.

With an increasing number of therapeutic failures accumulating with a larger series of cases, I am now increasing this time to 15 weeks or more.

One example to confirm the need of longer treatment consisted of a young male whom I saw in July of 1950, who had been living in Mexico most of his life. He gave a history of a recent attack of high fever, and, when we examined him, he had an elevated diaphragm on the right side. Because of this,

we ordered a stool examination, which was positive for endamoeba histolytica. He was treated continuously from 7/17/50 until we sigmoidoscoped him on 8/23/50.

This sigmoidoscopic examination was done to rule out tumor, due to the fact that he had recently passed blood in his stools.

In spite of continuous treatment for over a month, his rectum and lower sigmoid still had numerous amoebic ulcerations. When sigmoidoscoped again 9/18/50, two months after treatment had been instituted, these ulcers were healed.

This patient had no symptoms at any time of disturbed bowel habits, in spite of these ulcerations in his colon.

Another Case

Another case seen 6/12/51 was a referral because of amoebiasis. This patient was treated continuously for a period of over ten weeks, when she went to a large clinic for another complaint.

At this clinic, they made complete examinations for evidence of amoebiasis, all of which were negative, and they advised her to discontinue the treatment.

In a little over a year, this patient again returned with a positive diagnosis of amoebiasis, and, after carrying out a more adequate course of treatment, she has had no recurrence.

A third case was treated 15 weeks continuously with arsenic and iodine preparations without improvement of his diarrhea. I believed that he must have another cause for the continued diarrhea, but, when aspirated mucous was examined, there was no difficulty in finding amoeba histolytica.

I recently saw a mother and her young daughter who had been treated in Arizona for amoebiasis about a year before. One had had six months' treatment, the other, five months.

Amoeba were demonstrated on the mother, and the daughter had a recurrence of her original symptoms which had been relieved by treatment, although no amoeba were demonstrated at this time.

There have been several cases that consulted me after having been diagnosed as having amoebiasis by other physicians and treated from one to three weeks. These patients had been discharged as "cured" by their physicians.

Some of these have asked me to continue the treatment, as they felt that they were not cured, and have had relief of symptoms with further treatment.

Others were treated further by me on my own initiative on the basis of symptoms still being present, and these were improved.

Now, if continuous treatment for several months does not effect a cure, the chances of doing it with continued treatments are probably slight.

However, it seems reasonable that periodic, interrupted treatment seems to offer promise of keeping the chronic infection in a better controlled state with the patient comfortable and probably less a hazard to his contact.

Certainly, it is preferable to having repeated relapses of acute or sub-acute attacks.

The majority of cases that have relapsed after what I had considered adequate treatment have proven to have colonic diverticuli.

I, therefore, have become very discouraged about anticipating a cure in cases with this complaint.

The diverticuli apparently act as a focus of infection, shut off part of the time from the intestinal amoebicide, but later expelling their infected contents into the intestinal lumen and causing reinfection.

Controversial Subject

Another controversial subject in the treatment of amoebiasis is the question of the so-called non-pathogenic amoeba—endamoeba coli, endolimax nana, iodamoeba Butschlii and dientamoeba fragilis.

In studies made at the University of Pennsylvania [4] they made a five-year study of over 400 patients showing amoeba. They made no distinction between the histolytica and the so-called non-pathogenic amoeba.

They treated these patients with Carbarsone for ten days and 44 per cent showed improvement of their digestive complaints.

To avoid the criticism that the improvement might be due to the non-specific tonic effect of arsenic, some patients were treated with solution of potassium arsenite in therapeutic doses, none of which showed any improvement in their symptoms.

28 Patients

In addition, 28 patients in which the diagnosis of amoebiasis had not been established were treated with Carbarsone and only four showed symptomatic relief.

This raises the question, were these patients actually infested with amoeba which were not detected by examination?

Rankin, Bargen and Buie, in their book "Colon, Rectum and Anus" [5] stated that amoeba coli and nana should be considered pathogenic, when found in patients with gastro-intestinal symptoms. With this much evidence, I think it is safer to treat patients who have the so-called non-pathogenic amoeba rather than to ignore them.

We treat all so-called non-pathogenic amoeba. To date, the majority of these patients have shown clinical improvement. Is this due to these amoeba being pathogenic, or is the improvement because there is an underlying amoeba histolytica infection that was not detected at the original examination?

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Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

(Continued)

34. "In hundreds of hospitals the so-called "barium swallow" observed in the erect patient is regarded as a satisfactory examination, and so the early growth is missed. The mucosal pattern should be viewed in the recumbent patient with the same care as that of the stomach, and a solid opaque bolus should replace emulsion if this has revealed no abnormality." *Loc. cit.* p. 897.

35. "There is an area of radiological romance which is bounded above by the pylorus and below by the ileocaecal valve. This stretch of gut as yet inaccessible to even the most determined endoscopist, provides material for the doubtful claims of duodenitis, jejunitis, and ileitis. Once these labels have been accepted by doctor and patient the incentive to search for a rational explanation of symptoms wanes and leads to treatment for a condition which seldom exists." *Loc. cit.* p. 897.

36. "It behooves the less experienced pathologist to avoid the flattering invitation to make a diagnosis, or even to suggest treatment, on the strength of blood analyses of patients whom he may not even have seen. I have seen three such reports bearing a confident diagnosis of pancreatitis because of high serum amylase figures. In each case the cause of the abnormality was morphine addiction, with consequent spasm of the sphincter of Oddi." *Loc. cit.* p. 897.

Diagnostic Possibilities

37. "To consider at length the diagnostic possibilities of a case is academically interesting but laudable only if at the end the physician commits himself to a firm opinion. Intellectual dishonesty is easily acquired. It is so facile to say later, "I did mention that as one of the possibilities." *Loc. cit.* p. 897.

38. "It comes as a surprise to many a young consultant to find that patients of good upbringing, and allegedly excellent educational training, can be as muddled in their thinking and in their answers as the most exasperating out-patient from the lowest social stratum." *Loc. cit.* p. 898.

39. "Just as thirty years ago the advance of medicine was arrested by the theory of focal sepsis, so today the search for truth may be imperilled by the parrot-cries of "adaptation reactions" and "collagen disease." *Loc. cit.* p. 898.

40. "We are as a profession not nearly sufficiently alive to the mental and physical changes which are produced by the constant taking of therapeutic doses of barbiturate, an addiction which is doing far more harm to the efficiency of the upper social classes than are the more dramatic and better-known forms of addiction." *Loc. cit.* p. 900.

41. "To be ruthlessly critical of one's own theories is one of the most difficult tasks we have to accomplish; for, as Bacon remarked, "A mixture of a lie doth ever add pleasure." In some walks of life, especially in politics, this does not matter, but in medicine it will not do." *Loc. cit.* p. 900.

Clinical Note from Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

In metabolic acidosis potassium tends to move out of cells partially compensating anions that have been lost from extracellular fluid; this potassium then becomes available for excretion and may be lost from the body. Correction of acidosis unmasks the potassium depletion, for potassium then returns to cells leaving a deficit in extracellular fluid. In metabolic alkalosis potassium tends to move into cells and plasma potassium levels fall. Correction of the alkalosis leads to restoration of plasma potassium levels from intracellular stores. Severe degrees of potassium depletion in addition to disturbances in function in other organs may lead to renal failure because of degenerative changes that occur in the renal tubules.

"POINTERS"

From the Case Records of the Massachusetts General Hospital,* 1954

1. "Sometimes, bronchogenic carcinoma is so surreptitious that it appears first as a mediastinal mass without any evidence of lung involvement." p. 81

2. "Ovarian carcinoma may occasionally be implanted on the diaphragm and extend through it to involve the pericardium and pleural cavities." loc. cit.; p. 119

3. "The liver is practically always involved in infectious mononucleosis although jaundice is relatively uncommon." loc. cit.; p. 171

4. "Mention might be made about the procedure of putting the T tube through the ampulla, which is quite widespread throughout the country at present. We have recently had a number of cases in the hospital that tend to make us believe that that procedure may not be entirely harmless—that it may give rise to pancreatitis." loc. cit.; p. 173

5. Although the pain with a pancreatic neoplasm can be of any character, it usually radiates to the back and is relieved when the patient stands up or bends over." loc. cit.; p. 214

6. "Fourteen per cent of the patients with ruptured spleens had delayed bleeding. Of this group of 63 patients with delayed rupture, in 55, or 87 per cent, the interval before the signs appeared was five hours to sixteen days after the initial damage; in the remaining eight patients the time varied up to two years. A three-week delay is unusual, therefore, but not impossible." p. 392

7. "On the other hand, it is not safe to assume that bright-red blood or currant-jelly clots represented bleeding below the ileocecal valve because if the bleeding from esophageal varices is massive enough, dark-red blood or currant-jelly clots may appear in the stools." loc. cit.; p. 436

8. "Whenever I see a report of gas with a fluid level below the diaphragm bilaterally, I always raise the question of whether it was really free air. Gas beneath the right leaf of the diaphragm is almost always free, but occasionally the bowel moves up between the liver and the diaphragm, giving an x-ray picture suggesting free gas beneath the left leaf." loc. cit.; p. 689

9. "Volvulus of the ascending colon may also present two fluid levels, one in the hepatic flexure under the right leaf of the diaphragm and one caused by rotation of the cecum under the left leaf." loc. cit.; p. 609

10. "One can be fooled by air in bowel between the liver and the diaphragm. That can be settled by a lateral x-ray film taken with the patient lying on his back or side." loc. cit.; p. 609

11. "Some years ago Dr. Tracy B. Mallory looked up the cases with enlarged spleens and found that the largest spleens, except for the leukemias and the primary splenic diseases, were associated with chronic pyelonephritis." p. 697

12. "Fibrosis may be the sequel to a number of varieties of injury to the lung. Unresolved pneumonia, healed infarcts, silicosis, berylliosis, lipoid pneumonia, scleroderma, polyarteritis nodosa, tuberculosis and sarcoidosis, as well as a host of other conditions, both known and unknown, all result in pulmonary fibrosis that may be very similar in appearance." loc. cit.; p. 786

13. "We have seen patients who raised 500 to 700 cc. of blood repeatedly with mitral stenosis—in rare cases even to exsanguination." loc. cit.; p. 838

14. "The intractable pain, which first simulated that of ulcer, started in the epigastrium then reached the back, eventually spread to become periumbilical and defied treatment, is typical of carcinoma of the body or tail of the pancreas." loc. cit.; p. 152

15. "With cancer of the pancreas, pain often extends downward, eventually to involve the umbilical region; it goes lower than the actual site of the pancreas. That is due to the pressure on, or invasion of, the celiac plexus." loc. cit.; p. 152

16. "Can a considerable degree of mitral stenosis be present without evidence of right-ventricle hypertrophy? The answer to that question is certainly yes." loc. cit.; p. 398

17. "In about 20 per cent of cases of viral hepatitis, all the flocculation tests may be within the normal range." loc. cit.; p. 485

18. "When severe headache accompanies a clinical picture of cardiac infarction think of aortic dissection as the cause rather than myocardial infarction." A composite; loc. cit.; p. 749

19. "That no definite ulcers were seen in the x-ray films of the colon does not rule out ulcerative colitis, even in a patient who had had the disease for ten years. Often, the colonic changes seen by the radiologists are not remarkable, and we should not exclude the diagnosis of ulcerative colitis merely because x-ray films show no ulcerations." loc. cit.; p. 985

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*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. — Andrew M. Babey, M. D.

THE PRESIDENT'S COLUMN

What Of Our Rights?

By Celso C. Stapp, M. D., El Paso

In the past few years we have seen States Rights' practically disappear, and now individual rights are being whittled down.

In looking at one instance, without weighing guilt or innocence, but weighing the principles involved, we are now having a rash of proposed trials of our soldiers overseas by foreign countries. These men are being deprived of their constitutional rights while serving in our armed services.

Are we going to subscribe to trials which do not properly weigh the innocence or guilt with fair rules of evidence? Shall we stand by and see unusual types of punishment for our GI's? It one of our soldiers is found guilty of stealing in Iraq shall we permit his right hand to be amputated?

Justice Prevails

During World War II I was president of a General Courts Martial in the service for quite some time, and in my court and all others I knew of proper punishment was always given the guilty and most of the foreigners involved were quite well satisfied that justice had prevailed.

As a missionary's son I lived in Brazil for twelve years. One of the most cherished thoughts that we had as citizens of these United States was that we knew our country would defend us as individuals. We were proud of our individual privilege of freedom and self respect. I left that fine country in 1927. I wonder what our citizens there and around the world think now?

After some of the recent decisions of the Supreme Court I wonder if they will legislate by jurisdiction some of our inherent rights into unheard of interpretations?

We as people in a Democracy should write to our elected representatives and demand that our rights be protected at all times.

ABSTRACT

TIMED-DISINTEGRATION CAPSULES

Feinblatt, T. M. & Ferguson, E. A., Jr., Timed-disintegration capsules (Tymcaps)—a further study—an *in vivo* roentgenographic study, blood-level study and relief of anginal pain with pentaerythritol tetranitrate, *New England J. Med.* 256:331, (Feb. 21) 1957.

In a further study of timed-disintegration capsules, the disintegration pattern visualized *in vivo* by roentgenography was confirmed by periodic blood-level determinations of the drug and clinical responses.

The medication used was Corovas Tymcaps (timed-disintegration capsules of pentaerythritol tetranitrate), which were administered to 20 patients suffering from chronic symptoms of angina pectoris.

Comparison of the results showed that X-ray visualization of disintegration, blood-levels of pentaerythritol tetranitrate and the clinical response all agreed.

Evidence of X-Ray

The evidence of X-ray dispersal, continued consistently high blood levels, and continuing substantial reduction of pain showed continuing absorption and utilization of the pentaerythritol tetranitrate during the period from three to nine hours after administration.

The conclusion was reached that pentaerythritol tetranitrate administered in the form of timed-disintegration capsules can be evenly and consistently utilized for control of anginal pain.

Four Quarters

Corovas Tymcaps contain pentaerythritol tetranitrate 30 mg. The first quarter (7.5 mg.) of this medication is dispersed immediately; the second, third and fourth quarters, after three, six and nine hours, respectively.

The preferred technique of administration is one capsule every twelve hours, taken on an empty stomach with an adequate amount of water.

The suggested optimum time of administration is one capsule half an hour before breakfast and a second capsule before the evening meal approximately twelve hours later.

EDITORIAL

Mental Health and the Private Mental Hospital

By John W. Myers, M. D., Albuquerque

In October 1955 the Governor of New Mexico appointed a committee to survey the question of mental health in New Mexico and make a report. Members of the medical profession were recently sent a copy of this report*, and a summary of certain recommendations was made for improvement of the mental health situation in this state.

Strangely enough, in listing the state's psychiatric facilities and needs, the report did not indicate any shortage of psychiatric beds at the State Hospital. Stranger still, no mention at all was made of the facilities and availability of the private psychiatric hospitals. However, in various other reports, the private general hospital has seemed to play an important part. Perhaps, this report was intended to deal only with tax-supported institutions.

The fact is, we have in New Mexico two private psychiatric hospitals (Nazareth Sanatorium, and Sandia Ranch Sanatorium, both located in Albuquerque) with a total capacity of eighty beds. This fact may not be widely known. However, both hospitals are licensed by the State Health Department, are listed in various other reports, and it would be reasonable to assume that the Committee had access to those reports.

State Hospital

In the last Directory of the A.M.A., the capacity of the State Hospital was listed as 1150. Our latest information indicated that the total admissions at the New Mexico State Hospital for 1956 were about 500. The total admissions for the two private psychiatric hospitals were 334. During the same period (1956) ten patients were transferred from the private psychiatric hospitals ot the state hospital at Las Vegas.

Of the patients residing in the two private mental hospitals there was a total of fifteen domiciliary patients who remained in the institutions throughout the year. These, of course, were not active-treatment patients. The average hospital stay for the active-treatment patients was 27 days. Our best information indicates that, for the entire state of New Mexico, in 1956, there was a total of 834 mental patients admitted to the State Hospital and the two private mental hospitals.

We have no knowledge of just how many mental patients were treated in general hospitals during that period of time, but a recent report from the U. S. Public Health Service on this question, classifying admissions for the entire United States, indicates that there were no psychiatric cases admitted to general hospitals in New Mexico during the past year. However, the accuracy of that report is questionable since, as we all know, mental patients are ocassionally accepted in general hospitals throughout the state.

Further Look

A further look at these figures shows that, of the total of 834 psychiatric patients admitted during 1956 in New Mexico, 40 per cent were admitted to the two private psychiatric hospitals, with a little less than 60 per cent admitted to the state hospital. Keep in mind, also, that the two private psychiatric hospitals have less than 7 per cent of the total psychiatric beds in the state (80 beds of the total of 1,200). Thus, with less than 7 per cent of the psychiatric beds, the private hospitals admitted slightly more than 40 per cent of the total patient load.

For the nation as a whole, on an average, the private mental hospitals care for 36 per cent of the new admissions, as opposed to 64 per cent admitted to the public hospitals (state, federal, county, city, etc.) These figures certainly show that the two private psychiatric hospitals in New Mexico have been doing a good job. We feel that the state hospital also has been doing a splendid job, considering its appropriations and limited personnel.

But it is also obvious that if the state hospital had been further burdened with the 40 per cent cared for in the private psychiatric hospitals, its load would have been much heavier, and consequently the cost to the taxpayers proportionately greater. Particularly, let us keep in mind that the two private psychiatric hospitals have received no public funds whatsoever—not even Hill-Burton money. We feel then that we can be justly proud of the achievements of these two private hospitals.

Cost of Care

On page six of the report of the Governor's Committee report it is said that, "The cost of private care is not decreasing sufficiently to anticipate a reduction in the proportion cared for by the state. The prevailing insurance plans, on the whole, do not cover psychiatric ailments which would lessen the burden on the state facilities and funds. In the Western states

* MENTAL HEALTH IN NEW MEXICO — REPORT OF GOVERNOR'S COMMITTEE Sept. 24, 1956

the tax structure is not such as would allow much community support of the mentally ill."

The Committee, we feel, has failed to tell all the facts, and we feel that a few of the facts are as follows:

1. The average room and board cost in the private psychiatric hospital is considerably less than in any general hospital in the state. The Committee reports that the cost of private care has not "decreased sufficiently." The fact is, it has not decreased at all. Why should it? Of necessity, the board and room rate has increased 20 per cent in the past fifteen years, while labor, materials, etc. are up 100 per cent. We cannot speak for all psychiatrists, but for our own group, the medical fees are the same today as they were fifteen years ago. These fees are comparable with those charged in Denver and El Paso, and are considerably less than those charged in California and in the East.

Special Nursing

2. Where special nursing is required, it is furnished at much less cost than in the general hospital. This is accomplished through "group nursing".

3. Though the average stay in a mental hospital may be longer than in a general hospital, it is still within the means of the average citizen who has the foresight to carry an ordinary hospital insurance policy. Keep in mind, also, that the average stay for treatment cases is about thirty days, and that private insurance policies are available under the New Mexico Physician's Service. Such policies pay for 50 to 120 days of hospital care, and this includes psychiatric care. The insurance coverage may not pay the entire cost, but it does take the "big bite" off the family. Surely the Governor's Committee was aware of these facts, though they do not appear in its reckoning.

Policies Available

4. These private insurance policies are available to the average citizen, and are within the means of the average working man, covering the entire family, at a cost of about thirty cents per day, or about the price of a pack of cigarettes. Unfortunately, the New Mexico Blue Cross organization discriminates against the mental patient, and the psychiatric hospital. Until the Blue Cross meets this need, we recommend that no family carry that type of protection.

5. In the past ten years there has been no shortage of bed space for private psychiatric patients in New Mexico. It has not been necessary for any patient to leave the state for want of bed space in a private psychiatric hospital.

Private psychiatric hospitals have considerably lightened the financial load of New Mexico's taxpayers by caring for more than 40 per cent of the total psychiatric admissions.

Considering these facts, it seems reasonable to conclude that the Governor's Committee in some regards, "missed the boat."

28 Medical Arts Square

Jesse Hamer, M. D., of Phoenix is Vice President of A. M. A.

Jesse Hamer, M. D., well-known internist of Phoenix, was elected Vice-President of the American Medical Association at the recent New York meeting.

Dr. Hamer has been active in the affairs of the Arizona Medical Association for a quarter of a century. He was President in 1936 and had been delegate to the American Medical Association constantly since 1934.

He also has had an active interest in the Southwestern Medical Association. He was Vice President in 1940 and served on the Editorial Board of *SOUTHWESTERN MEDICINE* from 1934 to 1941.

ORIGINAL ARTICLES

Emotional Factors in Skin Disorders

By James F. Patterson, M. D., Physician, New England Center Hospital; Assistant Professor of Medicine, Tufts University School of Medicine, Boston

The relationship of emotional disturbances to skin disorders is of particular interest, not only because of the possible emotional causes of skin disease, but also because of the profound effects of even relatively mild and benign skin disorders upon the emotions.

Certainly the skin is an excellent organ for observing the effects of the emotions on bodily functions. It required the unusual circumstance of an external gastric fistula in an otherwise healthy man for Beaumont and Wolf and Wolff[1] to be able to make their observations of the effects of emotions on the gastric mucosa. In every person the skin is easily available for such observation.

Emotional reactions, such as anger and fear, produce the visible reactions of pallor, flushing, or sweating in the skin. These changes are brought about by the action of the autonomic nervous system upon the effector organs in the skin, namely, the blood vessels (pallor or flushing), the sweat glands (perspiration) and the pilo-erector muscles ("goose flesh"). In addition, by mechanisms which are not so well understood, emotional stimuli may lead to itching or urticaria. Most of these phenomena, can be produced experimentally by emotional stmiuli.

SOUTHWESTERN MEDICINE takes great pleasure in bringing to its readers a series of papers devoted to the psychosomatic aspects of various disease processes and syndromes. To many practitioners the psychogenic overlay is not a tangible affair, and its evaluation remains obscure. The fact that this obscurity may well lead to results which leave much to be desired, from both the standpoint of the physician and patient, makes any study such as this invaluable to all. The series constitutes a symposium which was presented under the auspices of the Bingham Associates at the New England Medical Center in Boston. This presentation was made for post-graduate education. Through the kindness of the Tufts-New England Medical Center, the readers of SOUTHWESTERN MEDICINE will be able to join in the advantages offered by one of its major post-gradnate activities.

Physiologic Changes

In applying this information to the study of actual skin disease, we must realize that many of the manifestations of common skin disorders are the result of the physiologic changes described above, but that these changes need not necessarily have an emotional cause since they may also be produced by mechanical, allergic, infectious, chemical or other factors. Our task is to distinguish those conditions or those patients in which psychic stimuli play a role. This is most difficult since emotional disturbances may play no role, a causative role, an aggravating or continuing role, or may be entirely the result of the skin disorder.

From the investigative point of view, there are many approaches to this subject, and these are all being explored at present. These include physiological studies of the skin (measurements of sweating, blood flow, and so on) during psychiatric interviews, biochemical studies of the skin and blood, determination of personality types in relation to certain skin disorders and psychodynamic studies. There are numerous published studies of this sort with a variety of conclusions by the authors. For the purpose of this conference, I think it suffices to say that no general overall conclusions have been reached and that much more study of this sort needs to be and is being done.

Evaluation Problem

From the point of view of medical practice, how can one evaluate the role which emotional factors are playing in any one patient that the physician sees? Certainly the physician in his evaluation of the patient as a person will be able to detect overt symptoms or signs of emotional disturbance, such as those of anxiety, depression, hysteria, hypochondriosis, and so forth. He may also be able to detect certain emotionally stressful situations or happenings in the patient's environment. Here I think it is important to point out that the mere presence of emotion-producing events or emotional difficulties in patients with a skin disorder is not proof of a casual relationship. Finally, deep probing into the patient's subconscious to learn the possible psychodynamics of the skin disorder is probably best left to the physician who is trained in psychiatry.

How may this information be used? There are no set rules. The presence of symptoms or signs of emotional illness, a past history of a "psychosomatic" disorder, and a clear historical relationship between emotional disturbance and exacerbation of the skin disorder are all helpful in determining a psychic cause for the disorder. Evaluation of personality types has not proved to be very useful in this matter. Diag-

nosis by therapeutic trial is also not very helpful since it is well known that physical treatment may markedly alleviate an emotionally-induced skin disorder by the psychotherapy which is invariably given with it. Again, lack of response to psychotherapy does not mean an absence of psychic cause for the disorder, since like all other therapy the psychotherapy may simply have not been effective.

Complete Listing

A complete listing of skin disorders associated with emotional disturbance is not possible here. Such lists may be found in the recent textbooks by Obermayer[2] and by Pillsbury.[3] The following is a brief classification of these disorders.

There is one group which one can call psychically-induced skin disorders. This includes the self-induced eruptions of factitial dermatitis, in which, because of psychic disturbance, the patient inflicts damage upon his skin, usually with chemicals such as acids, phenols, and so forth, and neurotic excoriations, in which the patient has a compulsion to dig at a certain area of skin until damage is produced.

A second group would include those skin disorders in which emotional factors seem to play an important role either as cause or as contributory factor. This group includes some cases of anal and vulvar pruritus, chronic urticaria, acne rosacea (in which the flushing reaction plays a part), lichen planus (a disorder of varied and mostly unknown causes but in which acute generalized exacerbations seems to follow episodes of emotional distress) and neurodermatitis. This last needs further explanation.

Localized Form

There is a localized form of neurodermatitis in which a discrete area of skin is frequently scratched or rubbed by the patient. In time thickening and pigmentation of the skin occur in this area. Disseminated neurodermatitis (often called synonymously atopic eczema) in the adult present in the following way. The patient has a family history of allergic disorders and often has himself allergic disorders such as hay fever or asthma. He has usually had eczema as an infant, but as a young adult has a recurring, severely itching, weeping or dry eruption on face, neck and flexural surfaces of elbows and knees.

It is felt by most authorities in this field that there are probably multiple causative factors of this disease (hereditary, allergic, constitutional and psychic), but that at this stage the psychic factors are often more important therapeutically than the allergic. It is still difficult, however, to distinguish between the emotional disturbance as a cause and the emotional disturbance as a result of a cosmetically disfiguring and very uncomfortable disorder occurring during the formative years.

The eruption may not only produce an unsightly appearance, but may cause the patient to exude serum or to scale. Pruritus is often severe and in the normal person is replaced when he scratches by the less uncomfortable sensation of pain. In disseminated neurodermatitis, scratching only adds to the skin damage. The term neurodermatitis is also used loosely to describe a variety of pruritic skin disorders of unknown etiologies in which there seems to be a relationship to emotional disorder.

Third Group

There is a third group of skin disorders in which emotional factors may play some part, though there is little good evidence for this relationship. This group includes seborrheic dermatitis, acne vulgaris, psoriasis, dermatitis herpetiformis, vitiligo and alopecia areata.

Finally and just as important as the other groups is a group of skin disorders which produce an emotional disturbance in the patient. An example of this is severe acne vulgaris which, as far as we know, is not basically an emotional disorder, but because of its severe cosmetic injury, occurring at a particularly critical time in the development of the individual, may produce a profound emotional reaction. Similarly, though psychic factors very likely are one of the etiologic agents in the production of the recurrent vesicular eruption known as "housewife's hands," the interference with normal duties, the great discomfort of the sensation of itching and the interference with sleep may in turn produce depressive or anxiety symptoms in the patient.

It is immediately clear from all of the above that treatment of the conditions that have been discussed involves the treatment of the entire patient, as well as the skin.

Recurring Lesions

The patient with recurring ulcerative lesions of peculiar shape and in whom it can be established that the lesions are the result of application of nitric acid, though this is denied, is almost certainly in need of psychiatric management. The young adult with atopic eczema (disseminated neurodermatitis) who in association with this has anxiety or depressive symptoms, whether these be cause or result, may often be managed by the non-psychiatrist with simple psychotherapeutic measures in addition to therapy of his skin, but at times he will require formal psychiatric therapy. The adolescent girl with acne who has developed a phobia about being seen in public may be helped by the simple psychotherapeutic means described, but again may have as a result of her acne a psychiatric disturbance severe enough to require referral to a psychiatrist.

What are the methods by which the non-psychiatrist may relieve some of the emotional symptoms and possible emotional causes of illness in these patients? The value of allowing the patient to discuss the symptoms or his situational problems is clear. The interest and attention of the physician to the patient and his symptoms, even in incurable disorders, will be of

further help. Treatment of the skin disorder itself is, of course, important since, by relieving discomfort and unsightly appearance, the patient's reactive symptoms may also be greatly relieved.

Medications

Unfortunately, there are no internal medications which are uniformly effective in relieving the very uncomfortable sensation of pruritus associated with some skin disorders, though simple local therapy will often be helpful. Agents to relieve anxiety and to counteract insomnia may be of great help. Barbiturates seem to be effective, thouh some feel that chloral hydrate and paraldehyde are more effective sedatives in these patients. Others use the more sedative antihistaminic drugs for these patients and these seem to help, probably more because of their sedative than antihistaminic action. Finally, the newer agents such as chlorpromazine and the tranquilizers may prove to have a place in treatment of this group of patients. A word of warning is needed here. All of the drugs described are capable of producing skin eruptions themselves and, unless this is recognized, there may be confusion in evaluating the progress of the patient if he develops a drug eruption.

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Next Month: "Emotional Factors In Gastrointestinal Disorders" by Franz J. Ingelfinger, M. D., Visiting Physician, Massachusetts Memorial Hospital; Associate Professor of Medicine, Boston University School of Medicine.

Label Your Prescriptions!

By William E. Lockhart, Jr., M. D., Alpine, Texas

Times have changed. Not too many years ago the really effective drugs doctors prescribed could be named on the fingers of one or both hands. Is it surprising that a custom of secrecy between doctor, pharmacist and patient developed?

Today we have hundreds of potent, effective drugs which must be administered with increasing understanding and with the full cooperation of your patient. Label your prescriptions! Deal the patient in on the secret. Latin and mysticism is not for modern medication.

Patients travel now-a-days. Another doctor likely will attend your patient while he is taking your medication. You may be away to medical convention. The course of the illness and the effect of the medication need to be observed.

A wise clinician once said: "You cannot know too much about any medication applied to the human organism." Every medication has an element of experimentation. Let your colleagues in on the secret. Your patient will benefit.

Unless your colleague can call the pharmacist on the phone — and since this takes time and effort it is likely to be omitted — he cannot know for certain what you have prescribed, and his only safe course is to discontinue your medication.

Once I attended a woman who was taking eighteen grains of thyroid. Several doctors thought she needed thyroid, and she was taking all prescriptions as directed.

Your colleague does not desire to cut your throat. When he discontinues your prescriptions, the patient may wonder which member of the profession, if any, he should trust. Label your prescriptions. You will benefit. Medicine will benefit!

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

May 16, 1957

Frederick P. Bornstein, M. D. – Editor – Case No. 828

Presentation of case by Maurice C. Davidson, M.D.

History: — Dr. Nathan Kleban:

A 14-year-old school boy was admitted to the hospital because of convulsions on April 2, 1957.

For two or three weeks before admission the patient began to complain of dull occipital, frontal and posterior neck pain, got up two or three times during the night to urinate, noted hesitancy in starting his urinary stream, experienced insomnia, and had less frequent bowel movements.

Ten days before entrance swelling about the eyes and mouth was present daily on waking but disappeared later in the day. Vomiting of previously ingested food started and occurred after a meal once daily.

Eight days before admission visual acuity diminished. A doctor in Juarez prescribed medicine.

Five days before admission pain was present in his eyeballs.

Following ten episodes of vomiting on the night of admission, the patient had three generalized tonic convulsive seizures, with head and face turned to the right, and he was brought to the hospital.

Recent sore throat or fever were denied by the mother, who gave the history, and who did not know if there was dysuria or the volume and color of the urine. Any previous similar episode or any kidney disorder in the past were denied.

Past history: The patient weighed 11 lbs. 8 oz. at birth. Pregnancy, delivery and neonatal history were otherwise not remarkable. He was breast fed, later given evaporated, then pasteurized cow's milk. He received no vitamins, had diphtheria immunization. The patient had been hospitalized or treated in Juarez for meningitis at age one year, pneumonia at age five years, measles age eight years, typhoid age eight, and minor injuries without fractures or unconsciousness when struck by a car at ten years.

Family history: Father, mother and two younger siblings were living and well. There was no known family history of kidney disease or hypertension.

Physical Examination:

T. 99.2. P. 88. R. 12. B. P. 240/160-170

The patient's state of consciousness on admission is not described. Except for what was described as a grade IV retinopathy, periorbital edema, and slight prominence of the eyes, the physical examination was otherwise not remarkable.

Hospital Course:

On admission to the ward the patient was restless, complained of severe headache. Tonic and clonic convulsive seizure was observed by the nurse. Oral and parenteral phenobarbital and oral reserpine were given. A spinal puncture was done on the second day. Blood pressure ranged from 160/90 to 190/150.

The patient was seen on the day of admission by the attending staff man, later by a neurosurgical consultant. Penicillin was given to eradicate beta hemolytic strep from the throat. Magnesium sulfate and pentolinium tartrate (Ansolysen) were administered.

Third Day

On the third day blood pressure rose to 230/190, later dropped to 120/100. On tentolinium, chlorpromoyine, (Thorazine), magnesium sulfate and phenobarbital, blood pressure varied from 110/86 to 180/146.

The patient seemed to be comfortable at times, but was generally restless, moaned, complained of injections, pulled out the retention catheter. Bleeding from the nose began on the sixth day. Constipation was complained of on the seventh day, when his blood pressure ranged between 140/110 and 140/90. Abdominal distention was noted on the eighth day.

Ninth Day

On the ninth day a consultant found the patient somnolent, crying out and complaining of left anterior chest discomfort and difficult breathing, oriented, hoarse, at times cooperative and at other negatavistic.

Respiration varied, was regular at times, at others Bist or Cheyne-Stokes. Pulse was 100, regular; blood pressure 160/130 in the left arm, 210/140 left leg.

Retinal vessels were narrowed, irregular, with A-V nicking hemorrhages old and recent, exudate, but no disc elevation.

There were palpable cervical, axillary, epitrochlear and inguinal lymph nodes. There was no clear breath odor. Nostrils contained clotted blood.

The second pulmonic sound was accentuated, with a grade II systolic murmur. There was an equivocal presystolic apical gallop. The patient refused to sit up because his buttocks were painful from injections.

There seemed to be presacral edema which did not pit. The colon was filled with hard feces. Hard brown stool was obtained on rectal examination.

Temperatures

On the first day the temperature rose to 101.8, varied between 99-100 for the next two days, rose to 102.6 (R) on the fifth day, remained normal until the day before death when it rose to 100. Urine output ranged from 750 to 1400 cc/24 hours, was 1500 cc. two days before death.

On the night of the tenth hospital day breathing became labored, color cyanotic, diffuse crepitant pulmonary rales were heard, coma developed, blood pressured dropped.

Oxygen, I-V Cedilanid, and rotating tourniquets did not reverse the pulmonary edema. The patient died on April 12 in congestive heart failure and shock.

Laboratory:

X-rays: April 2, 1957 — P-A chest film — "Findings consistent with hypertensive cardiovascular disease". Skull films: "Negative for evidence of increased intracranial pressure".

Urine: April 2: 1.007; Albumin 4+; 3-8 RBC; 1+ Ep. cells; 0-3 hyalin casts
April 4: 1.005, 4+ albumin; 0-6 WBC, 20-30 RBC; occasional finely granular casts
April 8: 1.020; 1+ albumin — microscopic negative
April 11: 1.012; 2+ albumin; 14-18 RBC/1pf

Blood counts: April 2: Hb. 12.9; Ht. 39%; WBC 22, 200; Segs. 95; lymph. 5
April 11: Hb. 8.9; Ht. 28%; WBC, 10,800; Seg. 82, Lymphs. 13, Monos. 1, Eosino. 4

Blood chemistry: April 2: Blood sugar 190 mg%; Urea Nitrogen 39.5 mg%
April 4: Creatinine 6.2 mg%; Urea Nitrogen 53.2 mg%
April 6: Urea Nitrogen: 62 mg%
April 9: Urea Nitrogen: 68 mg%
April 11: Calcium: 7.3 mg%
Potassium 6.8 meq/L
Phosphorus: 11.0 meq/L
Sodium: 116 meq/L

Sedimentation rate April 2 was 21 mm. in 60 minutes

Spinal fluid **April 2:** 8 WBC, 2 polys, 6 lymphs. numerous RBC; total protein 50.0 mg%, sugar 95 mg%; culture unsatisfactory (contaminated)

VDRL negative — April 3
Anti-strep titer: 50 units — April 4
C-Reactive protein — negative — April 4
Urine culture April 8: No growth in 72 hours
L. E. cells — No L. E. cells found April 12.

X-Ray Discussion — Dr. Vincent Ravel:

The studies that we performed on this patient consist of a single view of the chest and the skull series. The only significant findings in the chest were the prominence of the left ventricular segment of the cardiac silhouette which is consistent with hypertensive heart disease. There is no evidence of congestive failure.

We don't see any notching of the ribs such as might be present in a coarctation of the aorta and, significantly at this time, there is no evidence of azotemia. It is not infrequent that radiographic findings in the chest such as pulmonary edema accompany an azotemia with failure, but on this examination there is nothing to indicate that there might be a kidney lesion other than the possible hypertension.

As far as the skull is concerned, the radiographic findings here are entirely within normal limits, there is no evidence of any increased intracranial pressure, there is no increase in the digital markings, the pineal is not visualized, that might be of some help in case there happened to be a brain hemorrhage with displacement of the pineal.

Dr. F. P. Bornstein:

Let me ask you one question, Vincent. In a patient 14 years old, what is the minimum period it would take for a heart to develop such hypertensive changes as seen here?

Dr. Ravel:

Well, that's a very difficult question as a number of things happen before the ventricle shows signs of hypertrophy. Of course one of the important factors which determine the amount of ventricular hypertrophy or the degree of it is the coronary circulation.

Certainly people with inadequate coronaries cannot show extensive ventricular hypertrophy. Here you have a youngster with an apparently normal coronary circulation who will be more likely to develop ventricular hypertrophy in a shorter period of time than you would in a more elderly person.

Dr. W. G. Morrow, Jr.:

First of all, I would like to say that I did not see this patient but I have read the summary and noted the eye findings. It seems to me that the differential diagnosis would lie between an intracranial lesion and cardiac difficulty and something wrong with the kidneys. It says in the protocol that the retinal vessels were narrowed, irregular with A-V nicking, that there were hemorrhages old and recent, and an exudate but no disc elevation.

Ordinarily, in patients where the hypertension or the cardiac difficulty is primary, and severe enough, one sees some papilledema. If it's an intracranial lesion there should be some other eye signs, such as paralyses of the extra-occular muscles, and I see no notation of that in the protocol. I do not think I could differentiate between the cardiac and renal difficulty, but just making a guess I would say that the difficulty is primarily renal.

Clinical Discussion: —
Dr. Maurice C. Davidson:

This is the case of a 14-year-old boy who entered the hospital with hypertensive encephalopathy. He had the common prodromata: headache, vomiting, some loss of visual acuity leading to grand mal convulsions. The nocturia and edema of face described in the protocol are not part of hypertensive encephalopathy.

Some may ask why I do not consider the convulsions due to the "uremia"? The initial BUN of 39.5 mg per cent is not high enough to cause generalized convulsions. The central nervous system symptoms of uremia are drowsiness, muscular weakness, dull headache, periods of restlessness, muscular twitchings and delirium, and generalized convulsions, which when they occur, are preterminal. Blindness or partial blindness is extremely rare in pure uremia.

Convulsions

Hypertensive encephalopathy results in convulsions which appear in no way different from grand mal epilepsy. There may be a preliminary cry. During the tonic phase, cessation of respirations results in cyanosis and the venous return is impeded so that the neck veins swell.

During the clonic phase, gasping labored breathing begins. The convulsions are occasionally unilateral or may alternate from one side to the other. This alternation is one reason to believe vasospasm is responsible for the convulsion and not hemorrhage and thrombosis.

The patients may foam at the mouth and occasionally bite their tongues, but not nearly as frequently as with true epilepsy. Nobody knows why. Spincter control may be lost.

As many as 200 convulsions in one day have been reported so the condition may resemble status epilepticus.

Immediately after the convulsion, the Babinski reflexes are positive and there may be absent or sluggish pupillary reaction. Consciousness is lost and coma and stupor follow the convulsions.

The very high blood pressure distinguishes the condition from uncomplicated epilepsy.

Retina Examination

Examination of the retina usually will show papilledema or lesser degrees of hypertensive retinopathy. There may be elevated NPN and BUN but there is no correlation between the degree of nitrogen retention and hypertensive convulsions.

Some cases have no NPN elevation. Headache which radiates to the back of the neck is very common and severe in contrast to the dull headache of uncomplicated uremia.

Stiffness of the neck may be present and spinal tap is necessary to rule out meningitis or subarachnoid hemorrhage.

The clinical picture of hypertensive encephalopathy may suggest brain tumor but extreme degrees of hypertension are very rare in brain tumor. You rarely get over 180 systolic in brain tumors. Albuminuria may be present after convulsions or extreme exertion but is transitory, usually of less than 12 hours duration. Prolonged albuminuria is evidence of kidney damage.

Basic Mechanism

The basic mechanism underlying the convulsions is cerebral anoxia. In animal experiments clamping both carotid arteries causes generalized convulsions which stop when the clamps are released. In the Stoke-Adams syndrome pauses in the effective cardiac output, if prolonged, cause convulsions.

Fishberg in his book, "Hypertension and Nephritis" states that two different conditions may produce the cerebral anoxia. The first is cerebral edema, which arises as the cerebral arterioles with their relatively thin musculature are unable to constrict sufficiently to balance the great increase in systemic pressure.

The cerebral capillary pressure rises, favoring transudation of fluid and hindering capillary re-absorption.

Usually there is increased cerebro-spinal fluid pressure. This was not demonstrated in the case under discussion because the spinal tap was done long after the convulsions had subsided and the blood pressure reduced.

Second Type

This second type of condition leading to anoxia and convulsions, according to Fishberg, is cerebral artery spasm. He thinks this is very common in older patients with marked arteriosclerosis.

There the sclerotic vessels are barely able to maintain normal cerebral metabolism and a very slight constriction is sufficient to throw the individual into anoxia and convulsions.

Hypertensive encephalopathy is said to occur in

(1) Renal disease — especially nephritis
(2) The malignan phase of hypertension
(3) Eclampsia
(4) Lead encephalitis

Vague Symptoms

Let us get back to tonight's case history. The patient was admitted with hypertensive encephalopathy. The vague urinary symptoms do not help me reach a diagnosis. The edema about the eyes and mouth strongly suggest glomerulo-nephritis. It is not characteristic of cardiac edema.

The family and past history do not help. There is a possibility that he had scarlet fever and not measles when eight years of age. However, post-scarletina nephritis, particularly in a child, is rarely followed by chronic nephritis.

I was the staff man who saw this case on the day of admission and throughout his course, so I have a little advantage over some people who discuss these cases. I did check the femoral pulses and felt sure he did not have coarctation of the aorta.

This can cause hypertension at any age but not the kidney abnormalities. My initial impression was acute glomerulo-nephritis and I ordered penicillin as I always do in these cases where there is no allergy to it.

Possibly a focus of streptococcic infection is still present and can be eradicated. It lessens the danger of pneumonia if pulmonary edema develops.

Urinary Volume

I was disturbed by the good urinary volume which the patient continued to put out. Acute glomerulo-nephritis with hypertension and uremia have oliguria or anuria.

The low specific gravity of the urine and minor degree of hematuria and albuminuria were also out of keeping with acute nephritis. I have never seen an acute nephritis in which magnesium sulphate, reserpine, and ansolysin were so ineffective in lowering the blood pressure.

For these reasons, I soon felt we were dealing with an acute exacerbation of chronic glomerulo-nephritis. I was not disturbed by the absence of history of acute nephritis.

Just as we can get no history of acute rheumatic fever in at least 50 per cent of the patients with mitral stenosis, so many cases of chronic glomerulo-nephritis give no history of the acute phase. It is mild and overlooked. Glomerulo-nephritis is a disease of young people.

In one series reported by Fishberg, 50 per cent who died of chronic glomerulo-nephritis, proven at autopsy, were between ten and thirty years of age. Glomerulo-nephritis occurs twice as often in males as in females.

Clinical Course

I believe our patient followed the clinical course of chronic glomerulo-nephritis, hypertensive type. The course was rapidly downhill. The BUN rose, anemia developed, and finally cardiac failure and pulmonary edema carried off the patient.

This is a CPC so I must consider other possibilities. Could the patient have had a chronic pyelonephritis? Indeed this is a possibility.

If the infection is quiescent, the so-called healed stage of Weiss and Parker, the urine will not contain pus cells and culture may be sterile as it was in our case.

With chronic pyelonephritis, there may be no history of acute or recurrent urinary tract infections. These patients may present themselves for treatment in the terminal stage, when uremia or hypertension dominate the clinical picture.

The disease may not be recognized until autopsy. I had thought this a very rare occurrence in children. Butler reported 7 cases in children ages 3 to 11 years, with blood pressures averaging 190/140.

These cases terminated as did our patient. I do not believe periorbital or facial edema, nephritic type of edema, was present.

One Article

I vaguely thought of renal papillary necrosis — an acute necrotizing form of pyelonephritis. In one article on the subject I found 60 per cent in diabetics and 40 per cent in non-diabetics. The youngest non-diabetic was 40 years of age.

I have seen only one case and massive hematuria dominated the picture from beginning to end. We did bilateral retrograde pyelograms on that patient early in the course of the disease, the X-rays were interpreted as normal.

The clinical diagnosis was hemorrhagic type of acute glomerulo-nephritis. She was a non-diabetic woman of perhaps 45 who died in uremia in seven to ten days. What a surprise that postmortem was.

Although chronic pyelonephritis is a possibility, I am sure intravenous pyelograms would have shown no kidney shadows. I do not believe retrograde studies were justified in this critically ill boy.

If he had improved, kidney X-ray studies should have been done before accepting a diagnosis of chronic glomerulo-nephritis.

Very Unlikely

Renal tuberculosis seems very unlikely even at El Paso General Hospital. However, it could give a picture something like this.

Polycystic kidneys can give this type of terminal picture. The kidneys were not palpable and I believe it is unlikely. However, we should have obtained a flat film of the abdomen.

This procedure would not have hurt our patient and if the kidney shadows could have been identified, we might have made a brilliant diagnosis. We would not have saved the patient.

I suppose pheochromocytoma can end in this picture of "malignant hypertension". A regitine test might have been done. He certainly was not a Cushing's syndrome.

It is possible that he had a unilateral ischemic kidney. By the time this degree of hypertension and uremia develop, the opposite kidney is too badly damaged by "hypertension" to make surgery of any real value.

Against Lupus

I did not suspect lupus. The age, sex, absence of

joint or skin manifestation, absence of anemia and pleural effusions are all against this dagnosis. One negative L. E. preparation does not rule it out.

The other generalized "collagen" disease, polyarteritis, also seems most unlikely. There was no eosinophilia, no abdominal pain, no muscle pain and little fever. I don't suspect collagen disease when only one system — the cardio-vascular-renal system — is involved.

In summary, I believe that the patient had chronic glomerulo-nephritis, hypertensive type, with hypertensive encephalopathy and terminally cardiac failure and pulmonary edema. If I would make a second guess it would have to be the chronic form of pyelonephritis.

Dr. John M. Verosky:

I won't tell you what I think the patient had because I heard what he had, but there were a couple of interesting things about this boy when he was admitted. First, I did not think the amount of edema was consistent with an acute nephritis.

In a convulsing hypertensive, the first thought is an acute nephritis, while his appearance, with no body edema and minimal facial edema, would guide you away from that diagnosis.

Secondly, I thought it was interesting that the patient has had meningitis, pneumonia and typhoid fever, a pretty loaded history of infections for a 14 year old child. All these three illnesses can be accompanied by septicemias, and of course any septicemia can damage the kidney. I have no idea whether this has anything to do with this child but I think it is something to keep in mind.

In all purulent infections in children, particularly in children below the age of responding clearly to questioning on urinary symptoms, it is important to watch for renal complications.

Thirdly, aside from the little bit of edema that he had, I am sure that this child had no physical findings of illness, let alone renal illness.

Somebody had seen him in his office three or four weeks previously, and this emphasizes again the extreme importance of taking blood pressures in children, not just fourteen year olds, but much younger, even if there are no complaints at all referable to the cardiovascular-renal system.

Dr. Saul Appel:

I would just like to say one thing and to emphasize the failure of the potent anti-hypertensive medication in this case. That is not a surprise, because the patient was in uremia.

Frequently in the advanced hypertensives who do have impairment of renal function these powerful ganglionic blocking agents do nothing except to expedite the terminal phase of the disease.

I notice he had abdominal distention towards the end, which might have been an effect, one of the effects, of the Ansolysen. Dr. Davidson mentioned all of the possibilities, I think. I was thinking of some congenital anomaly that should be mentioned.

There is one thing that Dr. Verosky suggested, which I think we should just mention again,, namely, the incidence of essential hypertension in children, young people. We normally think of people in their twenties or thirties as having essential hypertension.

However, I am sure that we are missing many younger people who probably have a much higher blood pressure than is normal for their age. While I agree with Dr. Davidson that this is chronic, diffuse glomerular nephritis, still, it could have been an essential hypertension that went into the so-called malignant phase of hypertension and died with these clinical symptoms.

We have the heart appearance, the chronic hypertensive disease; his calcium was way down, and I feel that he had been in uremia for a long time. Perhaps one of the facts to explain the low urea nitrogen would be a poor dietary history in the recent few weeks at the end of his life.

Dr. Davidson:

We did get in a little trouble with our anti-hypertensive agents, and I should have been more alert and insisted on a daily evacuation.

When you are giving Ansolysen you simply must obtain a daily bowel movement, if you can't do it any other way, Pidocarpin is a very effective drug orally or by hypodermic.

Of course laxatives by mouth sometimes help. That was a distinct error in treatment, I don't believe it caused his death in any sense of the word.

Dr. Nathan Kleban:

Before Dr. Bornstein gives the results of his investigation, this boy certainly presented a complex problem of differentiation between acute and chronic disease.

I would like to say this. When I saw this boy, in addition to everything that has been discussed, the thing that puzzled me about him was the distinct and generalized lymphadenopathy which ran around a half centimeter to a centimeter in size and I couldn't fit it in.

Unless Dr. Bornstein has a specimen of some of these lymph nodes, I don't think his investigation will have been complete.

Clinical Diagnosis: Acute nephritis with uremia

Dr. Davidson's Diagnosis: Chronic glomerulonephritis, hypertensive type

Pathological Diagnosis: Congenital abnormality of the right ureter with obstruction and hydronephrosis; sub-acute glomerulo-nephritis superim-

posed upon chronic glomerulo-nephritis

Pathological Discussion: Dr. F. P. Bornstein:

On autopsy we found a well developed, 14-year-old boy measuring approximately 160 cm. in length and weighing approximately 50 kg. The pericardial sac was markedly dilated and contained considerable amount of fluid. The heart weighs 320 grams which represents a considerable cardiac hypertrophy for a child of this age and size.

Most of our interest, naturally, was concentrated on the kidneys. The right kidney weighed 160 grams and measures 15 cm. in greatest diameter. It had a cystic appearance. On further dissection, it became quite obvious that there was a hydronephrosis which extended to a point in the ureter where there was a stricture narrowing the ureter.

This can be interpreted as a congenital lesion of the right kidney with hydronephrosis which made the whole renal system extremely vulnerable because one kidney was practically non-functioning. The left kidney weighed 130 grams.

Left Kidney

The capsule of the left kidney stripped with some difficulty. The surface was reddish-brown, granular, mingled with numerous yellow dots. The renal cortex was dark red with numerous yellow streaks which extended into the papillae.

From these gross findings, an anatomical diagnosis of sub-acute glomerulo-nephritis and a congenital lesion of the kidney was made. The microscopic findings essentially confirmed the gross findings.

The significant additional finding was microscopic evidence showing that the process in the left kidney was of long standing, with areas of scarring and hyalinization of the glomeruli, representing the picture of a long standing chronic glomerulo-nephritis.

In addition, there were many glomeruli which had a crescent shaped exudate in the capsule of Bowman, representing the classical picture of so-called subacute glomerulo-nephritis.

Good Correlation

These anatomical observations correlated well with the clinical picture. It is a well known fact that glomerulo-nephritis is a process which proceeds in a slow fashion with frequent acute exacerbations.

In short, this patient had a badly damaged renal system, firstly, by the presence of a congenital lesion, secondly, due to the presence of a chronic glomerulo-nephritis.

The final disease process which lead to uremia and death was an acute exacerbation of his nephritic process which destroyed so much renal tissue that renal function could not be maintained.

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M. D.s Reported Spending More Time With Patients

While the U. S. doctor is devoting more time to his practice, he's seeing about 15 per cent fewer patients than he used to, Medical Economics has reported. The typical physician is now giving more minutes to each patient, as medical leaders have long been urging him to do.

The median doctor currently sees twenty patients a day. But "one in every three M. D.s sees at least thirty patients a day. And one in twenty-five sees sixty or more."

The typical G. P. takes care of twenty-five patients a day, five more than his specialist counterpart.

"Specialists with the heaviest patient loads are those in allergy and radiology-roentgenology," it says. They see about twenty-six patients a day.

"Specialists with the *lightest* patient loads are pathologists, anesthesiologists, and psychiatrists." Typical doctors in these groups see fewer than ten patients daily.

Coming Meetings

First Pediatric Conference, Organized by the Chihuahua Society of Pediatrics, Affiliated with the National Association of Pediatrics, Ciudad Juarez, Chih., Mexico, September 14, 15 & 16, 1957.

San Diego Postgraduate Assembly, San Diego County Hospiatl, San Diego, California, September 18 - 19, 1957. Haddon Peck, Jr., M. D., 525 Hawthorn St., San Diego 1, California.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, in El Paso.

Southwest Obstetrical & Gynecological Society, Annual Meeting, November 4 and 5, Las Vegas, Nevada.

Texas Surgical Society, El Paso, April 7 & 8, 1958.

Fifth International Congress of Internal Medicine, Sheraton Hotel, Philadelphia, April 24-26, 1958.

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Southwestern MEDICINE

VOL. XXXVIII SEPTEMBER, 1957 No. 9

MEETINGS

Southwestern Medical Association Will Meet in El Paso Oct. 9-11

The 39th annual meeting of the Southwestern Medical Association will be held in El Paso October 9, 10, and 11. Dr. Celso C. Stapp of El Paso is president.

Convention headquarters will be in the Hotel Paso del Norte, colorful establishment which has long been known as the stamping grounds for cattlemen of the Southwest. Registration will begin at 8:30 a.m. October 9 on the mezzanine of the Hotel Paso del Norte.

The galaxy of outstanding speakers who will address the meeting's scientific sessions is as follows:

Medicine: William Parson, M.D., Professor of Internal Medicine and Chairman of the Department of Medicine, University of Virginia School of Medicine.

Surgery: Oscar Creech, Jr., M.D., The William Henderson Professor of Surgery and Chairman of the Department of Surgery, Tulane University School of Medicine.

Pathology: E. E. Muirhead, M.D., Professor of Pathology, University of Texas Southwestern Medical School, Dallas. President, American Association of Blood Banks.

Orthopaedic Surgery: Frederick C. Bost, M.D., Clinical Professor of Orthopaedic Surgery, University of California School of Medicine, San Francisco. President, American Academy of Orthopaedic Surgeons.

General Practice: J. S. De Tar, M.D., Past President, American Academy of General Practice. Milan, Michigan.

Anesthesiology: Robert A. Hingson, M.D., Professor of Anesthesia, Western Reserve University, Cleveland.

Otolaryngology: Howard P. House, M.D., Professor of the Department of Otolaryngology, University of Southern California School of Medicine, Los Angeles.

Ophthalmology: Phillips Thygeson, M.D., Clinical Professor of Ophthalmology, University of California School of Medicine, San Francisco.

Obstetrics and Gynecology: Edward A. Banner, M.D., Assistant Professor of Obstetrics and Gynecology, Mayo Clinic, Rochester, Minnesota.

Mac F. Cahal, executive secretary and general counsel of the American Academy of General Practice, who made such an impression on listeners at the association's 1954 meeting in El Paso, will once again be the banquet speaker on Friday night.

Other Officers

Other officers of the association are, Dr. Louis G. Jekel, Phoenix, president-elect; Dr. W. J. Hossley, Jr., Deming, N. M., vice president; and Dr. Russell L. Deter, El Paso, secretary-treasurer. Members of the executive committee are, Dr. Hollis H. Brainard, Tucson; Dr. A. R. Clauser, Albuquerque, and Dr. A. G. Herrera, Chihuahua City, Mexico.

Technical exhibits will be shown on the mezzanine of the hotel while scientific sessions will be in the mezzanine ballroom. The business meeting is scheduled for 2:30 p.m. October 11 in the mezzanine ballroom.

The Southwestern Medical Association has been authorized by the commission on education of the American Academy of General Practice to grant a maximum of 14 hours credit, Category I, to members of the academy.

Chairman of arrangements for the convention is Dr. Merle D. Thomas.

Organization Meetings

Organization meetings, to be held during the convention, are as follows:

Orthopaedic Association Luncheon Round Table; Spanish Room, Wednesday, October 9, 12:15-1:45 p.m., Moderator, Dr. Louis Breck.

New Mexico Orthopaedic Association; Spanish Room, Wednesday, October 9, 2:00-4:30 p.m.

Anesthesiology Section; Spanish Room, Luncheon Round Table, Thursday, October 10, 12:15-1:45 p.m., Moderator, Dr. Merle D. Thomas.

Pathology Section; Indian Room, Luncheon Round Table, Friday, October 11, 12:15-1:45 p.m., Moderator, Dr. M. S. Hart.

Academy of General Practice, Garden Room, Breakfast Meeting of the New Mexico Chapter of Academy of General Practice, October 10, 8:00-9:15 a.m.; Garden Room, Luncheon Round Table, October 10, 12:15-1:45 p.m., Moderator, Dr. L. S. Evans.

Ophthalmology Section, Southwestern Medical Association; Spanish Room, Friday, October 11, 9:30-11:00 a.m.

Otolaryngology Section, Southwestern Medical Association; Spanish Room, Friday, October 11, 2:00-4:30 p.m.

Obstetrics and Gynecology Section, Southwestern Medical Association; Spanish Room, Friday, October 11, 12:15-1:45 p.m.

Social Activities

Social activities include a party in the Lobby Cafe in Juarez at 8 p.m., Thursday, October 10; a cocktail party from 6 to 7 p.m., Friday, October 11, in the Mezzanine Room of Hotel Paso del Norte with the Southwestern Surgical Supply Company as host; a banquet at 7 p.m. Friday in the Roof Ballroom of Hotel Paso del Norte.

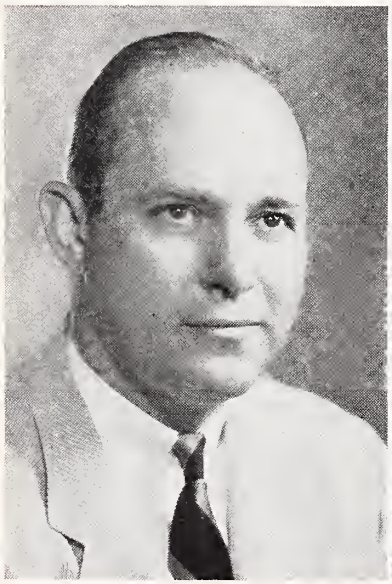
Mrs. Russell L. Deter, chairman of entertainment for the ladies, has announced that the Woman's Auxiliary to the El Paso County Medical Society will give a coffee at 10 a.m. Friday, October 11, in the Cafe Charmant in Juarez. A feature of this event will be a style show of clothes designed and made in Mexico: sports, patio wear and cotton formals. The show will be presented by Rios of Juarez. Members of the auxiliary will model and those participating are Mrs. H. M. Gibson, Mrs. Merle Thomas, Mrs. Robert Nering, Mrs. Vincent Ravel, Mrs. Morris Persky, Mrs. A. E. Luckett, Mrs. Joe Carter and Mrs. Ira Budwig.

Entertainment

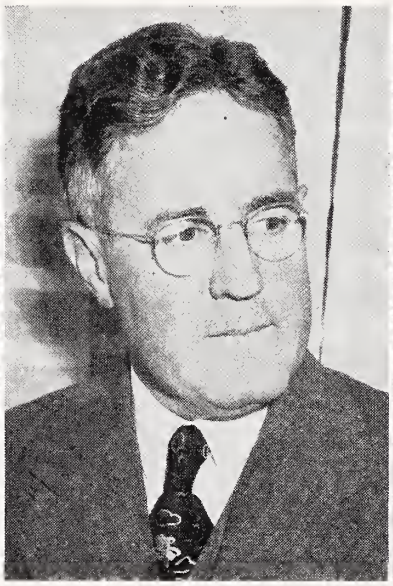
The entertainment arranged by the auxiliary also includes a luncheon in the International Club at 12:30 p.m. Thursday. Mrs. H. D. Garrett is president of the Auxiliary.

Registration fee for the convention is $15. Auxiliary members, nurses, medical officers of the Armed Services, medical students, residents and internes may register without fee.

Members of Dr. Thomas' committee are Dr. Newton F. Walker representing the El Paso County Medical Society; Dr. Maynard S. Hart, program chairman; Dr. Gordon Black, finance; Dr. Willard W. Schuessler, social program; Dr. E. S. Crossett, exhibits; Dr. H. D. Garrett, hotel arrangements; Dr. W. R. Gaddis, properties and General Practice representative; Dr. Jack Bernard, tournaments; Dr. Louis Breck, transportation; and Dr. Russell L. Deter, secretary.



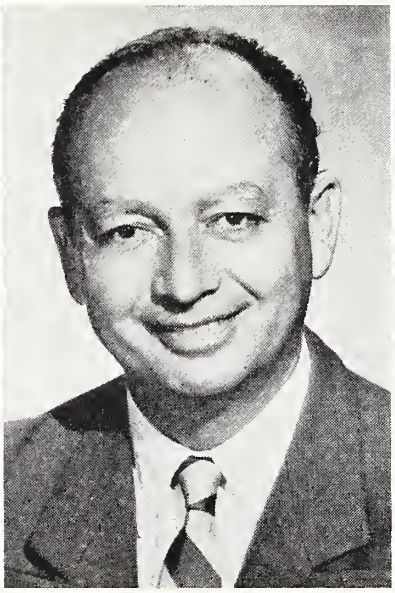
DR. BANNER



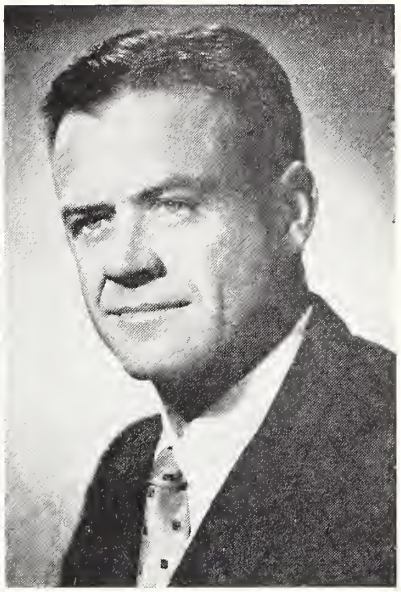
DR. BOST

DR. CREECH

DR. HINGSON



DR. HOUSE



DR. MUIRHEAD

Scientific Program

Wednesday Morning — October 9th
Session Chairman: Louis G. Jekel, M. D.
Phoenix, Arizona

10:00 A.M.
Welcome: Robert F. Thompson, M.D.
President, El Paso County Medical Society
Greetings: Celso C. Stapp, M. D.
President, Southwestern Medical Association

10:30 A.M.
"Management of Arterial Injuries" — Oscar Creech, Jr., M. D.

11:15 A.M.
"Evaluation of the New Oral Insulin Agents"
William Parsons, M. D.

Wednesday Afternoon — October 9th
Session Chairman: W. J. Hossley, Jr., M. D.
Deming, New Mexico

2:00 P.M.
"Thrombocytopenia — Diagnosis and Management" — E. F. Muirhead, M. D.

2:45 P.M.
"Cancer Detection in the Office of the Generalist" — J. S. De Tar, M. D.

3:30 P.M.
"A Current Survey of Obstetrical Anesthesia" — Robert A. Hingson, M. D.

4:15 P.M.
"The Rh Factor — Its Significance and Prognosis" — Edward A. Banner, M. D.

Thursday Morning — October 10th
Session Chairman: John Dietweiler, M. D.
Albuquerque, New Mexico

9:00 A.M.
"The Status of the General Practitioner"
J. S. De Tar, M. D.

9:45 A.M.
Visit Exhibits.

10:30 A.M.
"The Current Status of Treatment of Occlusive Peripheral Vascular Disease"
Oscar Creech, Jr., M. D.

11:15 A.M.
"The Orthopedic Emergencies of Adolescence" — Frederick C. Bost, M. D.

Thursday Afternoon — October 10th
Session Chairman: Hollis H. Brainard, M. D.
Tucson, Arizona

2:00 P.M.
"Office Gynecology" — Edward A. Banner, M. D.

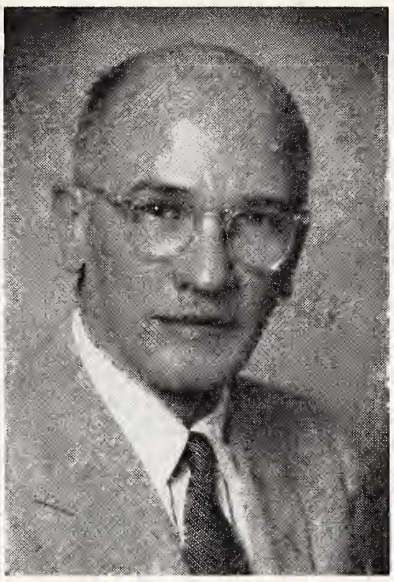
2:45 P.M.
"Iron Metabolism and the Diagnosis of Iron Deficiency" — E. E. Muirhead, M. D.

3:00 P.M.
Visit Exhibits.

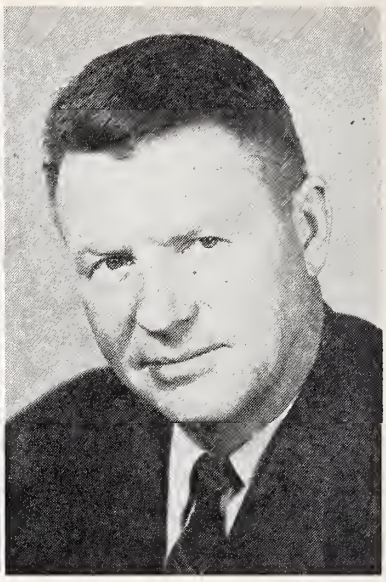
3:30 P.M.
"Obesity" — William Parsons, M. D.

Friday Morning — October 11th
Session Chairman: Leland S. Evans, M. D.
Las Cruces, New Mexico

DR. PARSON



DR. DE TAR



DR. THYGESON

10:00 A.M.
"The Treatment of Fractures by Simple Methods" — Frederick C. Bost, M. D.

10:45 A.M.
Visit Exhibits.

11:15 A.M.
"The Differential Diagnosis and Management of Impaired Hearing" — Howard P. House, M. D.

Friday Afternoon — October 11th
Session Chairman: Celso C. Stapp, M. D.
El Paso, Texas

2:00 P.M.
"The Indications and Contraindications for Topical Steroid Therapy in Ophthalmology"—Phillips Thygeson, M. D.

2:45 P.M.
Visit Exhibits.

3:15 P.M.
Business Meeting, Southwestern Medical Association.

4:15 P.M.
"Principles in the Prevention and Treatment of Cardiac Standstill During Surgery" — Robert A. Hingston, M. D.

Technical Exhibitors

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American Fracture Association Will Meet In El Paso Sept. 30-Oct. 2

The American Fracture Association will hold its 18th Annual Meeting in El Paso, Texas, Hotel Cortez, Monday, September 30, Tuesday and Wednesday, October 1 and 2.

The meeting will be preceded and co-ordinated with The University of Texas Postgraduate School of Medicine, El Paso Division, which will meet Sunday, September 29, in the El Paso County Medical Society's Turner Home at 1301 Montana Street. The University of Texas program is approved for Category I by the American Academy of General Practice. The American Fracture meeting is approved for Category II by the American Academy of General Practice.

Sunday Program

The program on Sunday at the El Paso County Medical Society Turner Home will be on Orthopaedic Surgery. The American Fracture Association meeting's scientific program will be limited to fractures.

Officers of the American Fracture Association are: Henry W. Meyerding, M.D., Rochester, Minnesota, past president; Duncan C. McKeever, M.D., Houston, president; Irvin H. Scott, M.D., Sullivan, Indiana, first vice president; F. Wayne Brewster, M.D., Holdrege, Nebraska, second vice president; H. W. Wellmerling, M.D., Bloomington, Illinois, secretary-general; and Frank C. Weber, M.D., Olney, Illinois, secretary-treasurer.

Dr. Meyerding

The American Fracture Association is composed of surgeons who treat fractures and is one of the "first" fracture associations. A very excellent array of talented speakers will present scientific papers at the meeting. Among them will be Dr. Henry W. Meyerding, outstanding world authority in fractures and orthopaedic surgery, Rochester, Minnesota, and former professor of the Department of Orthopaedic Surgery, Mayo Foundation. One of the members of the Board of Governors, Dr. Philip Todd Holland of Bloomington, Indiana, has arranged a motion picture showing the effective use of external, internal fixation of fractures.

The following internationally famous surgeons will participate in the program: Dr. Roger Anderson of Seattle, famous for his external pin fixation methods; Dr. John B. Erich, Rochester, Minnesota, maxillofacial authority; Dr. Robert T. McElvenny, Chicago, of orthopaedic fame; Dr. Dana M. Street of Memphis, famous Hanson-Street nail designer; Dr. I. William Machlas of Baltimore, outstanding orthopaedic surgeon; Dr. Garrett Pipkin, Kansas City, orthopaedic writer and editor, speaking on Fat Embolism; Dr. Duncan McKeever, Houston, outstanding Texas orthopaedist; and Dr. William Waldrop of Oklahoma City, of hand surgery fame.

Dr. Homan in Charge

All of these doctors have kindly offered to be on the postgraduate program of the El Paso Division of the University of Texas Postgraduate School of Medicine. Dr. Ralph H. Homan, Director of the Division, will be in charge.

Registration will begin Sunday for the American Fracture Association at Hotel Cortez.

A reception from 6:30 to 7:30 p.m. Sunday in the Hotel Cortez will be given by Dr. and Mrs. Ralph H. Homan and Dr. and Mrs. W. Compere Basom for all who attend the postgraduate program and the American Fracture Association meeting.

The American Fracture Association meeting will start at 8 a.m. each day, Monday, Tuesday and Wednesday. On Monday there will be a registration hour from 8:00 to 9:00 a.m., after which the scientific program will start.

Round Table Luncheons

On Monday noon several round table luncheons, each with its own subject, will be held. Tickets for these can be procured at the registration hour and will be limited. Those attending will be invited to present their own problem cases for discussion with the experts.

On Tuesday and Wednesday mornings the scientific program will start at 8 a.m. A discussion period is scheduled for each day. Those attending are invited to bring their own X-rays and present problem cases.

Dr. Basom Program Chairman

Dr. W. Compere Basom, El Paso, Program Chairman for the meeting, reports that he has been very pleased with the cooperation of the following orthopaedic surgeons who have responded to his invitation to present scientific papers on the program. They are: Dr. Charles B. Sadler of Amarillo, Texas; Dr. Morton H. Leonard of El Paso; Dr. Frank C. Weber of Olney, Illinois; Dr. Robert B. Elliott of Houston; Dr. S. Perry Rogers

of El Paso; Dr. Louis W. Breck of El Paso; Dr. William C. Westen of Santa Fe, New Mexico; Dr. Russell D. Harris of Oklahoma City, Oklahoma; Dr. Frank Owen McGehee of Houston; Dr. R. W. McIntire of Carlsbad, New Mexico; Dr. George L. Dixon of Tucson, Arizona; Dr. Mario Palafox of El Paso; Dr. George W. Horton of Odessa, Texas; Dr. Leo Cooper of Gary, Indiana; Dr. A. H. Diehr of St. Louis, Missouri; Dr. John S. Moore of Roswell, New Mexico; Dr. A. E. Luckett of El Paso; Dr. Zigmund W. Kosicki of El Paso; Dr. Herbert E. Hipps of Waco, Texas; and Dr. Henry H. Jordan of New York.

Many Papers

In addition, all of the doctors on the postgraduate program will present papers and be active in the program of the American Fracture Association.

Working closely with Dr. Basom in preparation of the program have been Dr. H. W. Wellmerling of Bloomington, Illinois, and Dr. Duncan C. McKeever of Houston, the president.

Program for Women

A program for women attending the meeting with their husbands includes a luncheon Monday noon, a social hour Tuesday evening followed by the annual dinner dance at 8 p.m. in the Hotel Cortez, and a program Wednesday in the El Paso County Medical Society's Turner Home at 1301 Montana Street. The Wednesday program was arranged by Mrs. Louis W. Breck in cooperation with the public relations committee of the Woman's Auxiliary to the El Paso County Medical Society. Speaking at the gathering will be Drs. McKeever and Holland.

Following close of the American Fracture Association meeting, a group of those attending will fly by Aeronaves de Mexico Airlines on a postgraduate trip to the Medical University at Guadalaraja, Mexico. This trip is under the direction of Dr. McKeever.

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THE UNIVERSITY OF TEXAS POSTGRADUATE SCHOOL OF MEDICINE

El Paso Division

Ralph H. Homan, M. D., *Director*, El Paso, Texas

PRESENTS

A COURSE IN ORTHOPAEDIC SURGERY AND FRACTURES

Place: El Paso County Medical Society (Turner) Home, 1301 Montana Street, El Paso, Texas
Tuition Fee: $10.00
Date: Sunday, September 29, 1957
Time: 8:30 A.M. to 5:00 P.M.
Credit Hours: Seven

Program

8:30 A.M. Dr. Duncan McKeever, Houston, Tex.
"Mechanical Principles Involved in Fixation of Fractures"

9:20 A.M. Dr. William L. Waldrop, Oklahoma City, Okla.
"Problems In Hand Surgery"

10:10 A.M. Dr. Roger Anderson, Seattle, Wash.
"The Advantages of the Transfixion Method of Treating Fractures"

11:00 A.M. Dr. John B. Erich, Rochester, Minn.
"Maxillofacial Fractures"

11:50 A.M. - 1:00 P.M. LUNCH

1:00 P.M. Dr. Robert T. McElvenny, Chicago, Ill.
"Social and Psychological Significance of Scars"

1:50 P.M. Dr. Dana M. Street, Memphis, Tenn.
"Medullary Fixation"

2:40 P.M. Dr. Garrett Pipkin, Kansas City, Missouri
"Fat Embolism"

3:30 P.M. Dr. I. William Nachlas, Baltimore, Maryland
"Injuries to the Cervical Spine and Their Many Manifestations"

4:20-5:00 P.M. Discussion period of program
The Chairman of the American Fracture Association Meeting and Program Committee for the El Paso meeting, Dr. W. Compere Basom, wishes to extend his sincere thanks to the above speakers who so graciously cooperated in helping to arrange this excellent postgraduate program.

6:30-7:30 P.M. RECEPTION - Hotel Cortez - All are invited.

Dr. and Mrs. Ralph Homan
Dr. and Mrs. W. Compere Basom

THE AMERICAN FRACTURE ASSOCIATION

1957 - 18th Annual Meeting

Hotel Cortez, El Paso, Texas

SCIENTIFIC PROGRAM

Papers limited to twenty (20) minutes

MONDAY, SEPTEMBER 30, 1957

8:00 Registration - Mezzanine, Hotel Cortez

9:00 GENERAL ASSEMBLY - Sun Room, off mezzanine, Hotel Cortez. Duncan McKeever, M.D., President, presiding.

9:10 - 9:30 "Impairment of Motion in the Hand Resulting from Fractures"
William L. Waldrop, M.D., Oklahoma City, Okla.

9:40 - 10:00 "A Technique of Reduction and Intramedullary Pinning of Comminuted Colles Fractures"
Garrett Pipkin, M.D., Kansas City, Mo.

10:10 - 10:45 View Exhibits

10:45 - 11:05 "Taxes, Life, Fractures and Medicine"
Robert T. McElvenny, M.D., Chicago, Ill.

11:15 - 11:35 "Fractures of the Nasal and Malar Bones"
John B. Erich, M.D., Rochester, Minn.

12:00 Noon Round-table luncheons

1. "The Avoidance of Pitfalls in Fracture Therapy"
   Roger Anderson, M.D., Seattle, Wash.
2. "Maxillofacial Fractures"
   John B. Erich, M.D., Rochester, Minn.
3. Duncan McKeever, M.D., Houston, Texas
4. "Fractures of the Head and Neck of the Humerus"
   A. H. Diehr, M.D., St. Louis, Missouri
5. Leo K. Cooper, M.D., Gary, Indiana
6. Philip Todd Holland, M.D., Bloomington, Ind.
7. Frank C. Weber, M.D., Olney, Ill.
8. Dana M. Street, M.D., Memphis, Tenn.

2:00 P.M. GENERAL ASSEMBLY
Duncan C. McKeever, M.D., Houston, Texas, Presiding

3:00 "Supracondylar and Intracondylar Fractures of the Femur Treated with Femoral Condyle Bladeplate"
Robert B. Elliott, M.D., Houston, Texas

3:30 View exhibits

4:00 H. D. Junkin Memorial Lecture
"The Management of Problem Fractures by Transfixion Techniques"
Roger Anderson, M.D., Seattle, Wash.

4:30 "Use of Sliding Femoral Fixation"
S. Perry Rogers, M.D., El Paso, Texas

Evening open — Sightseeing El Paso and Juarez, Mexico

TUESDAY, OCTOBER 1, 1957

8:00 Discussion period — Case reports. Bring your X-rays and problem cases for open discussion. Discussion of papers of previous day.

9:00 "Fractures of the Shaft of the Radius and Ulna"
Charles B. Sadler, M.D., Amarillo, Texas

9:30 "The Management of the Effects of Trauma to the Hand"
Morton H. Leonard, M.D., El Paso, Texas

10:00 "Fracture Follow-up Presentation"
Louis W. Breck, M.D., El Paso, Texas

10:30 View exhibits

11:00 GUEST SPEAKER. "Supplemental Fixation in Medullary Nailing of the Femur"
Dana M. Street, M.D., Memphis, Tenn.

11:30 "Ski Injuries"
William C. Westen, M.D., Santa Fe, N. M.

12:15 Board of Governors Luncheon

1:30 "The Use of the Peg Bone Graft for Non-Union of Femoral Neck Fractures"
Russell D. Harris, M.D., Oklahoma City, Okla.

2:00 "The Lottes Nail and Its Applications"
Frank Owen McGehee, M.D., Houston, Texas

2:30 "Fractures of the Elbow in Children"
R. W. McIntire, M.D., Carlsbad, N. M.

3:00 MOTION PICTURE "The Effective Use of External Internal Fixation in Fractures, Basic Procedures and Safeguards"
Philip Todd Holland, M.D., Bloomington, Ind.

3:30 View exhibits

4:00 "Immediate Treatment Planning for Definitive Treatment of Severely Injured Individuals with Multiple Fractures"
George L. Dixon, M.D., Tucson, Ariz.

4:30 "Intramedullary Fixation of Fractures of the Tibia"
Mario Palafox, M.D., El Paso, Texas

8:00 Annual banquet —Crystal Ballroom, Hotel Cortez

WEDNESDAY, OCTOBER 2, 1957

8:00 Discussion period — case reports. Bring your X-rays and problem cases for open discussion. Discussion of papers of previous day.

9:00 "The Treatment of Fractures of the Shaft of the Femur with the Intramedullary Nail"
Perry J. C. Byars, M.D., San Angelo, Texas

9:30 "A Survey of End Result Fracture Management"
David M. Cameron, M.D., El Paso, Texas

10:00 "Modern Treatment of Compound Fractures"
George W. Horton, M.D., Odessa, Texas

10:30 View exhibits

11:00 "Fractures of the Elbow and What to Do With Them"
Leo K. Cooper, M.D., Gary, Ind.

11:30 "Basic Principles of Pinning Fractures of the Femur"
A. H. Diehr, M.D., St. Louis, Missouri

12:00 Noon Lunch

1:30 "Closed Reduction and Pin Fixation of Supracondylar Fractures in Children"
John S. Moore, M.D., Roswell, N.M.

2:00 "Conservative Management of Fractures of the Ankle"
A. E. Luckett, M.D., El Paso, Texas

2:30 Zigmund W. Kosicki, M.D., El Paso, Texas

3:00 "Patella Fractures, 22-Year Follow-up"
Herbert E. Hipps, M.D., Waco, Texas

3:30 "External Fixation of Sub-trochanteric and Supracondylar Osteotomies of the Femur"
Henry H. Jordan, M.D., New York, N. Y.

4:00 Annual business meeting

Departure to Postgraduate Program in Guadalajara Medical University, Old Mexico

The next meeting to be in Oklahoma City,
October 1, 2, 3, 1958

Drs. Postlewaite and Deter Speak Before Southwestern N. M. Medical Society

Dr. Jack C. Postlewaite and Dr. Russell L. Deter, both of El Paso, were the principal speakers August 14 at the regular meeting of the Southwestern New Mexico Medical Society in Deming, N. M.

Dr. Postlewaite spoke on "Water and Electrolyte Balance". Dr. Deter's subject was "Surgical Management of Hemorrhoids". There was a record turnout of 31 members and their wives.

The Grant County Medical Society of New Mexico acted as hosts and arranged the program. The next meeting will be in Deming, New Mexico, at the Country Club on November 13, with the Dona Ana County Medical Society as hosts.

Programs Announced

The programs for the Fort Bayard Veterans Administration Hospital scientific meetings were announced as follows:

Dr. Edward M. Krusen, Chief of Physical Medicine and Rehabilitation, Baylor Hospital, Texas, Wednesday, Sept. 4, at 8 p.m. Subject: Some common problems in Physical Medicine.

Dr. Charles J. Smythe, Professor of Medicine, Colorado University at Denver, Wednesday, Oct. 2, at 8 p.m. Subject: To be announced later. He will also talk on Thursday morning, Thursday afternoon and Friday afternoon.

Dr. Valentine, Chief of the Area Medical Laboratory of the Veterans Administration Hospital in Denver, November 6, 8 p.m. Subject: Liver function tests.

Grand Rounds

Upjohn Co. Grand Rounds film 90 minutes, December 4, 8 p.m. Subject: Fifth Grand Rounds Diagnostic and Therapeutic Advances in Liver Disease.

Dr. Joe Holmes, Professor of Experimental Medicine, University of Colorado, February 5, 8 p.m. Subject: To be announced later.

Dr. William H. Pickett of Dallas, Texas, Associate Professor of Surgery, Southwestern Branch of the University of Texas, the 1st Wednesday in May or June. Subject: To be announced later.

Academy of Psychosomatic Medicine To Meet in Chicago Oct. 17-19

The program of the fourth annual meeting of The Academy of Psychosomatic Medicine to be held Oct. 17-19, 1957, at the Morrison Hotel in Chicago will be devoted to "Psychosomatic Aspects of Obstetrics, Gynecology, Endocrinology and Diseases of Metabolism." The meeting will be open to all scientific disciplines, as well as psychologists, social workers and nurses.

Information may be obtained from Dr. William S. Kroger, Secretary, 104 South Michigan Avenue, Chicago 3, Illinois.

This is the first meeting ever held in this country where every one of these specialists will be presented by a multi-disciplinary approach. The panels and symposiums will include obstetricians, gynecologists, endocrinologists, periodontists, psychiatrists, psychologists, anesthesiologists and other specialists in various fields of medicine. There will also be twenty-four round tables covering all aspects of the above specialties.

The purpose of the Academy is to teach psychosomatic medicine in a manner assimilable to the general practitioner and non-psychiatrically oriented physician.

Southwestern, Texas Dermatologists To Hold Joint Meeting In El Paso

The Southwestern Dermatological Society and Texas Dermatological Society will have a joint meeting in El Paso on Saturday, October 12. This meeting will bring together for the first time in a clinical session the dermatologists from all of Texas, New Mexico and Arizona.

In addition to clinical case presentations and discussions, the members will be entertained at social functions in El Paso and Juarez.

Coming Meetings

First Pediatric Conference, Organized by the Chihuahua Society of Pediatrics, Affiliated with the National Association of Pediatrics, Ciudad Juarez, Chih., Mexico, September 14, 15 & 16, 1957.

San Diego Postgraduate Assembly, San Diego County Hospital, San Diego, California, September 18-19, 1957. Haddon Peck, Jr., M. D., 525 Hawthorn St., San Diego 1, California.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, in El Paso.

Southwestern Dermatological Society and Texas Dermatological Society, El Paso Medical Center, 1501 Arizona St., El Paso, Oct. 12, 1957.

Academy of Psychosomatic Medicine, annual meeting, October 17-19, 1957, Morrison Hotel, Chicago.

Southwest Obstetrical & Gynecological Society, Annual Meeting, November 4 and 5, Las Vegas, Nevada.

Texas Surgical Society, El Paso, April 7 & 8, 1958.

Fifth International Congress of Internal Medicine, Sheraton Hotel, Philadelphia, April 24-26, 1958.

CURRENT THERAPY

New Gastrointestinal and Urinary Spasmolytic Drugs

By Jack A. Bernard, M.D., El Paso

Lakeside Laboratories has introdueed a group of piperidol derivatives which have been found to be effeetive in the relief of symptoms of the gastro-intestinal tract and in addition they have urinary spasmolytic effects, with a minimum of side reactions. Also they appear to have a seleetive action on the gastro-intestinal traet. The drugs include Dactil, Piptal, Cantil and Tridal, the latter (Tridal) being a combination of 50 mg. of Daetil and 5 mg. of Piptal.

Dactil is reported to be a rapidly effective spasmolytic agent without antisecretory effects. It is also said to have a surface anesthetic effect in addition to its antieholinergic effeet which makes it useful in the treatment of cardiospasm in infants and adults. The drug appeared to be beneficial mainly in spasm of the upper gastro-intestinal traet and spasm of the urinary bladder. Dosage is 5 mg. t.i.d. or q.i.d.

No Side Effects

Although Dactil has no antisecretory effects, Piptal on the other hand, is said to provide both potent antisecretory and antispasmodic effects. It is reported to benefit urinary retention also. No side effeets were noted. Piptal dosage is 5 mg., one three times a day before meals and two at bed time.

Tridal is a eombination of 5 mg. of Piptal and 50 mg. of Daetil. This has been done in order to provide the rapid effect of Daetil with the potent prolonged effeets of Piptal, in addition to eombining a spasmolytie agent with an antisecretory agent. Dosage is one tablet three times daily before meals.

Cantil was found to possess a more selective action on the lower gastro-intestinal tract and has been recommended therefore for spastie colons, and other disturbanees of the lower bowel. Dosage is 25 mg four times daily.

Very Effective

It is reported also that Piptal 5 mg., or Cantil 25 mg. has been very effective for relieving urinary retention due to spasm.

Finally, the evaluation of gastro-intestinal drugs is at best a very diffieult undertaking, but the development of a new series of agents that enable us to give selective therapy to the gastro-intestinal traet with a minimum of side effeets and without danger of urinary retention is a step in the right direction; further experience and reports of these and of others along these lines is encouraged.

ANESTHESIA

The Control of Postoperative Pain in Ano-rectal Surgery

Tucker, C. C., J. Kansas M. S. 53:230, 1952

Efocaine is a solution of procaine and butyl aminobenzoate in a water-miscible, non-toxic organic solvent. Its dilution by body fluids causes precipitation of the anesthetic agents to form a crystalline deposit which is slowly absorbed. Dramatic relief of postoperative pain was experienced by the majority of 40 patients who received the agent prior to ano-rectal surgery. In many instances local anesthesia lasted more than 10 days. Sphincter control was normal in all patients.

St. Francis Hosp.

REPETATUR: It is impossible to administer any form of clinical anesthesia that does not have the potentiality of a deleterious influence on respiration."—Papper.
Clinical Clippings, September, 1952.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Truths and Concepts Concerning The Cardiovascular System

1. "Although finding a murmur does not mean subacute bacterial endocarditis, none whatsoever practically eliminates that diagnosis."—SAMUEL A. LEVINE, *Christian Memorial Papers,* Waverly Press, Baltimore, 1936, page 2.

2. "When these pulsations [abdominal aorta and femoral artery] are normal, coarctation of the aorta does not exist."—SAMUEL A. LEVINE, *loc. cit.*, page 2.

3. "Given a rapid heart with a rate of 160 to 190 if slight irregularities are heard even at rare intervals coming spontaneously or produced by deep breathing or pressure over the carotid sinus, one can be certain that the rapid rate is not due to paroxysmal auricular tachycardia."—SAMUEL A. LEVINE, *loc. cit.* page 3.

4. "Coronary thrombosis in a patient with previous *persistent* auricular fibrillation is very rare." —SAMUEL A. LEVINE, *loc cit.*

Of Little Value

5. "Accentuation of the pulmonic second sound is a sign which I have found of little value in the diagnosis of mitral disease, as indeed of any other disease." RICHARD CABOT, *Facts on the Heart,* W. B. Saunders Company, Philadelphia, 1926, page 59.

6. "Next to morphine, the most useful sedative for cardiac patients is chloral hydrate."—JOHN PARKINSON (Personal Communication).

7. "Bad prognostic signs in heart disease are: paroxysmal nocturnal dyspnoea, bundle branch block, gallop rhythm, pulsus alternans, Cheyne-Stokes respiration, nephritis."—SAMUEL LEVINE, *Clinical Heart Disease,* W. B. Saunders Company, Philadelphia, 1936.

Worse Prognosis

8. "Mitral stenosis and failure with a regular rhythm carries a worse prognosis than mitral stenosis and failure with auricular fibrillation."—SAMUEL LEVINE, *Clinical Heart Disease,* W. B. Saunders Company, Philadelphia, 1936, page 278.

9. "Mitral stenosis, auricular fibrillation, failure and a rate of 130 has a better prognosis than mitral stenosis, auricular fibrillation, failure and a rate of 80."—SAMUEL LEVINE, *loc. cit.,* page 278.

10. "Always question what a patient with Cheyne-Stokes respiration says. He is usually not himself."JOHN PARKINSON (Personal Communication).

Diagnosis Questioned

11. "You can expect to get poor results from digitalis with right heart failure."—JOHN PARKINSON (Personal Communication).

12. "So common is right-sided hydrothorax in cardiac failure that if it occurs on the left side only your diagnosis is to be questioned or you must seek for a cause of pleural adhesions in the right chest." —JOHN PARKINSON (Personal Communication).

13. "Aortic aneurysms do not all pulsate. The factors causing absence of pulsations are: 1) Absence of aortic incompetence. 2) Fixation by adhesions to surrounding bony structures. 3) A clot inside the aneurysm."—JOHN PARKINSON (Personal Communication.)

14. "I have seen many patients die from too little digitalis, but almost never have I seen one die from too much digitalis."—HARLOW BROOKS (a statement made during Ward Rounds at Bellevue Hospital), 1934.

15. "Violent cough is often as bad as running upstairs as far as its effect on a weak heart is concerned."—RICHARD CABOT, *New England J. Med.,* 204: 882, 1931.

No Explanation

16. (Arteriosclerotic heart disease)—"these patients are apt to get delirious easily with nothing to explain it—even at post mortem."—RICHARD CABOT, *New England J. Med.,* 201: 489, 1929.

17. "Palpable thrill always means organic heart disease."—RICHARD CABOT, *New England J. Med.,* 201: 946, 1929.

18. "Cardiac failure from emphysema alone is surprisingly rare, and when it occurs it is with normal rhythm and edema, and as a very late event that is almost invariably terminal. Recurrent bouts of failure are almost unknown. Examples of failure apparently due to emphysema are most often explained by associated cardiovascular disease, usually hypertension and in such, failure can be recurrent."—JOHN PARKINSON AND CLIFFORD HOYLE, *Quart. J. Med., New Series,* 6: 83, 1937.

Tracheal Tug

19. "You can go wrong on tracheal tug in two important ways. First, a pulsation that goes in and out, forwards and backwards. Put your finger under the cricoid and you feel that pulsation. That is nothing. Tracheal tug must be an up and down pulsation. The second source of error is a tracheal tug that comes during inspiration only. A good many patients without aneurysm have this."—Richard Cabot, *New England J. Med.*, 199: 947, 1928.

20. "Aneurysms rarely break externally. Often they break internally and most often into the pericardium."—Richard Cabot, *New England J. Med.*,., 199: 948, 1928.

21. "Marked coarctation [of the aorta] is a very serious anomaly which usually kills in youth by one of four complications: heart failure, rupture of the aorta itself, apoplexy due to cerebral hemorrhage or thrombosis, and bacterial endocarditis invading the area of coarctation." Paul White, *Heart Disease*, The Macmillan Company, New York, 1937, page 218.

Vasomotor Failure

22. "We must in most cases abandon the idea of cardiac death at the height of acute infectious diseases such as pneumonia, typhoid fever and septic fever—In place of heart failure we must write vasomotor failure."—Theodore Janeway, *N. Y. Med. J.*, 85: 227, 1907.

23. "When congestive failure first appears in either aortic stenosis or aortic regurgitation, it is difficult to control, recurs quickly and indicates, usually, a short survival of a few months to a year or two."—Paul White, *Heart Disease*, The Macmillan Company, New York, 1937, page 451.

24. "A patient can scarcely be too old to have aortic dilatation or aortic incompetence due to syphilis."—John Parkinson, *Proc. Roy. Soc.* Med., 23 (part 3): 967, 1930.

25. ". . . . in cases of recent coronary occlusion the occurrence of congestive heart failure should call for digitalis without undue hesitation. Scrupulous care, however, not to exceed the optimum dosage should be obligatory."—Drew Luten, *The Clinical Use of Digitalis*, Chas. Thomas, Baltimore, 1936, page 101.

"POINTERS"

From the Case Records of the Massachusetts General Hospital, 1955*

1. "It is not too uncommon to see clear evidence of marked pulmonary congestion in X-ray films and to hear very little or nothing by auscultation." p. 34

2. "Pulmonary emboli occur in roughly 50 per cent of patients with rheumatic heart disease and mitral stenosis who die in congestive heart failure." loc. cit.; p. 35

3. "Most dissections, about 70 per cent, occur in the ascending aorta, and a fair proportion, perhaps 25 to 30 per cent, result in an aortic diastolic murmur." loc. cit.; p. 106

Operation Delayed

4. "I have seen patients with appendiceal abscesses on whom we have delayed operation so that the abscess could clear up, who have had an acute appendicitis with formation of another abscess in the interval." loc. cit.; p. 147

5. "About 2 per cent of patients with hypertensive heart disease have diastolic murmurs." loc. cit.; p. 277

Benign Disease

6. "Familial eosinophilia, but that is a benign disease producing no symptoms and is usually stumbled on accidentally. It is, in most reported cases, transmitted from the maternal side of the family." loc. cit.; p. 317

7. "I believe that 20 to 25 per cent of cases of perinephric abscess are not associated with pyuria; they can be walled off." loc. cit.; p. 319

Group of Patients

8. "I should mention the group of patients who have atypical mitral stenosis, "atypical" refers chiefly to the fact that the auscultatory findings are atypical; the remainder of the findings are usually typical of a high degree of mitral stenosis, in which the murmur is either poorly heard or not heard at all and in some cases has been heard in the past and has disappeared." loc. cit.; p. 322

9. "Subacute bacterial endocarditis without a murmur is extremely rare, occurring in less than one per cent of cases." loc. cit.; p. 451

10. "The combination of polycystic disease and aneurysm of the circle of Willis is now well established as a syndrome." loc. cit.; p. 596

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*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. —Andrew M. Babey, M. D

THE PRESIDENT'S COLUMN

Rights of The Individual

By Celso C. Stapp, M. D., El Paso

During the years that have followed the inception of the New Deal we have noted in our government a tendency toward legislation to control or modify everything that occurs in our country. With this increase in government control the freedoms of the individual have been encroached on, and it is rarely that we see the question of individual freedom considered as paramount.

The government at times functions for the government and not for the people as individuals. More and more group pressures influence the laws that are passed, or laws are passed to curry the favor of groups. We are migrating more into pressure group government than to the democratic constitutional guarantee of the individual rights form of government.

What of the individual? What of those rights that are guaranteed under the constitution within the Magna Carta or Bill of Rights? The national good is used as a broad spectrum excuse for any action which has either poor merits or none at all. When the real reason is searched for it is quite often cloaked under security. We may become rather dogmatic and feel that the people should know. The individual citizen should know, particularly when another citizen's rights are being encroached upon. Who knows but that you may be next.

Trial By Jury

Recently in the Senate of the United States it was contemplated that the right for trial by jury be taken away from citizens as individuals under the guise that it was to guarantee the right to vote which is already guaranteed by our constitution. The executive branch of the government was irate at the legislative branch because the judicial was not allowed to try, convict, and sentence an individual without trial by jury. Certainly the arguments that were going on in the Senate were partisan, but fortunately the wisdom of maintaining the safeguards was recognized, and I am sure many a citizen in all parts of our country felt relieved with the results.

Most of us feel that there is no place for discrimination because of race, color, or creed, as our founding fathers have handed down a heritage of freedom for all and individual dignity. We full well realize that we are going through trying times now with integration problems and an attempt to assert the rights of each individual. But it is no time to abolish the rights of individuals as citizens to try and correct an intricate problem in human relations. Certainly all individuals have a right to vote, and it should be maintained as guaranteed by our constitution.

Difficult Problem

Many of our very difficult problems cannot be corrected by legislation and certainly cannot be alleviated by depriving individual rights. There are prejudices which cannot be wiped out by change of law. Education and better informing the individual will do more than arbitrarily forcing change. Bringing the light of education to every individual will dispel the darkness of prejudices. With the written word of the press, the spoken word of the radio, and the picture word of TV this task is certainly going to be faster and easier. I do not mean to infer that we do not need laws to guarantee the rights of the citizen.

Certainly we cannot take a Pollyanna attitude and say that we have no problem. We have many problems and we also have pressure groups that do not clarify the situation by bringing out what is best for the individual and the country. Even more dangerous are our prejudices. Progress is painful and slow even in this fast age. Let us make sure that what we are getting is truly progress and that we protect the individual as the most valuable possession of our great Democracy. For without the individual we do not have a Democracy.

ORIGINAL ARTICLES

Emotional Factors in Gastrointestinal Disorders

By FRANZ J. INGELFINGER, M. D., *Visiting Physician, Massachusetts Memorial Hospital; Associate Professor of Medicine, Boston University School of Medicine, Boston*

This is the second of an outstanding series of seven articles covering the effects of emotional stress in the practice of medicine. The articles were prepared for a symposium delivered in January at the Tufts-New England Medical Center in Boston.

SOUTHWESTERN MEDICINE is proud to have the opportunity to publish the articles comprising this symposium on emotional stress which is believed to be the most complete and thorough discussion of this subject.

Next month: "Emotional Factors in Disorders of Menstruation and Infertility," by Joseph Rogers, M.D., Physician, New England Center Hospital; Assistant Professor of Medicine, Tufts University School of Medicine, Boston.

Since every patient is a human being, every illness has its emotional component. The management of each patient consequently requires skill, thoroughness and sympathy — in other words, the art of medicine. Because of the nature of gastrointestinal practice, however, emotional factors must be given special consideration. If we exclude acute conditions and those affecting the hepatobiliary tract, some 80 per cent of our gastrointestinal patients have one of the following conditions:

1. Anxiety states with fixation on the digestive tract.
2. Functional disorders, a term here used in a literal sense; that is, an alimentary tube that is structurally normal but that is causing symptoms because it is working in an abnormal fashion.
3. Peptic ulcers of the esophagus, stomach and duodenum.
4. Regional enteritis and ulcerative colitis.

In the etiology or expression of each of these conditions, emotional factors have been strongly implicated. In effect, then, a physician faced with a chronic complaint referable to the digestive tube must usually ask himself what the emotions have to do with this patient and what he will do about them. The answers that the physician gives himself are influenced by his training, his experience and, naturally, by his own emotions. Under the influence of these factors, I should like to offer you the following formulations.

First Category

Patients in the first category, those with anxiety, have minor discomfort or may have no discomfort at all, but they are inordinately concerned. They wonder, for example, why they belch so much and convince themselves that some fermentative process is generating poisonous gases in their stomachs. Or they assert that they have a bad taste in the mouth, can't eat a thing, and yet gain weight steadily. A large segment in this group worries about bowel movements, which actually are perfectly within the range of normal, but which the patient considers too green, too thin, or too irregular. Obviously this group includes those very ill patients, the cancerphobes. From the point of view of therapy, the important feature is that these patients are anxious. The digestive tract and its functions are essentially normal. Therapy must therefore be directed at the source of the trouble, the state of the patient's mind.

The second group, those with functional complaints, have *bona fide* symptoms: spasms, lack of coordination and other motor disorders which lead to such real discomfort as heartburn, cramps and aching pains. Patients in this group may or may not be unduly concerned, but the problem from the viewpoint of therapy is whether the motor disorders of the gut are psychogenic: Is the way in which the patient reacts, thinks and lives ultimately responsible? The answers are not easily discovered, for a sigmoid spasm may palpably be caused by long-standing laxative abuse or neglect of regular bowel habits, but who can be sure that the abuse and the neglect are not in themselves expressions of personality?

Disorder of Function

The aim of treatment in the second group is

two-pronged. Since a disorder of function exists, it should be treated by appropriate dietary and pharmacological measures. Secondly, to the extent that emotional states underlie the disorder — and this is an individual decision the physician must achieve in each patient — therapy of these emotional factors has to be purposefully included in the plan of management.

In patients in the third group, those with peptic ulcer, emotions created by stressful situations are believed by many to create humoral and nervous activity that leads to gastric hypersecretion and hypermotility with consequent ulceration of the mucosa. A temporal correlation between distressing conditions and ulcer activity certainly appears striking at times.

London Blitz

A favorite example is provided by the London blitz, during which ulcer perforations in London hospitals were four times as frequent as they had been in comparable months in previous years. Most of these perforations took place in men. This sex distribution has, however, not always been the case. Over the years, as far as one can tell, perforated ulcers of the duodenum and stomach have changed from being more common in women to being more common in men. Perhaps the reason for this is not clear to you, but explanations can always be concocted. In Victorian times, it has been pointed out, the male was boss and his life was free; the woman, on the other hand, faced two alternatives: to get married by the age of twenty-five or to be considered a failure. She therefore was frustrated and resentful — and she suffered from ulcer. By 1941 everything was different. Women had become emancipated and could be as much of a success in business as in the home, but the poor male, alas, while still responsible for the financial security of his family, had lost all prerogatives and authority. No wonder that he then developed the ulcer. If the perforations during the Blitz and those in 1890 are indeed ascribable to the explanations given, it appears — a skeptic has concluded by some rapid calculations — that an English male in 1940 was six times as frightened by the blitz as his grandfather was of Victorian life, but the English woman was bothered by the blitz only 1/200 as much as her grandmother was by the vicissitudes of life in 1890.

Intangible Relationship

The point of these stories is that the relationship between emotional states and peptic ulcer, though doubtlessly present, is intangible and still ill-defined. Furthermore, the ulcer patient does not take kindly either to psychotherapy or to pharmacologic agents that have sedative or calming effects. His personality is not the kind that is willing to admit a need for treatments of this type. Finally, temporary but complete relief can usually be provided in the form of direct medical management irrespective of emotional backgrounds. For these reasons, a direct attack on emotional factors is not particularly rewarding in patients with ulcer. This statement is not to be taken that I deny a role to the emotions in the pathogenesis of peptic ulcer; it is merely my contention that the psychotherapeutic and the pharmacologic measures available to us are not sufficiently successful in relieving acute or preventing recurrent ulcers to warrant their routine use. Obviously, some patients with ulcer will be sufficiently disturbed and agitated to require management of these states of the mind in addition to management of their ulcer.

Sickest Patients

The sickest patients in these groups we are discussing are apt to be those with regional enteritis and ulcerative colitis, and all aspects of these illnesses appear intimately associated with emotional responses. The individual's make-up, his dependency, and his reaction to stressing situations appear to form at least a part of the background to his disease. In addition, the severity of the illness, the discomfort of frequent bowel movements, the indecision of physicians, and the course that seems so resistant to medical measures all conspire to undermine the patient's morale and hope. In these conditions, consequently, therapy must include, if it is to be at all successful, an all-out effort to control the emotional state that may be considered both as the cause and the consequence of enteritis or ulcerative colitis.

Although emotional factors play a major role in 80 per cent of chronic digestive complaints, the therapeutic considerations imposed by these factors vary from condition to condition. In Group I, those with anxiety, treatment of the mental state constitutes the entire therapeutic effort. In Group II, the functional disorders, treatment of both emotional backgrounds and of the actual motor disorder is indicated. In Group III, those with ulcer, simple psychotherapy is based on individual need and is not considered mandatory. By contrast, in Group IV, those with enteritis and ulcerative colitis, consideration of the patient's emotional needs is a prerequisite of any form of management.

Words and Drugs

The techniques that the physician uses to treat the emotional aspects of gastrointestinal disorders necessarily depend on words and drugs. That the

physician must first establish confidence and rapport would seem self-evident; whereas another common recommendation, that the patient be removed from situations that upset him, is usually impractical.

Somehow the patient must be reassured, and this necessarily involves giving the patient diagnostic and prognostic impressions. In the case of ulcer, the assignment is easy; most ulcer patients accept the diagnosis without much concern, and the physician can usually predict rapid relief from symptoms. In the case of anxiety states and functional disorders, the problem is more difficult. The mere assurance that nothing is wrong is hardly sufficient. These patients are concerned or distressed and they seek an explanation for their symptoms. "Doctor, there must be something wrong; why else should I feel this way?" is their usual argument; and others, with more ingenuousness than true insight, will state that they could easily put up and live with their symptoms if they only knew the cause.

Under these circumstances, the physician can choose between the easy and the hard way out. The easy course is to blame some object, which, although it may be accepted by the patient as concrete, is in fact nebulous and unreal. Thus some dietary ingredient is held responsible, and unidentified toxin, an assumed allergy, or a run-down colon. Such diagnoses provide not only fancy explanations but also fancy treatments: elaborate diets, expensive antibiotics, or, in years past, less potentially harmful but equally impressive, exercises. Thus the tired colon might be pepped up by an "abdominal Scotch," which is in effect a hot and cold douche played alternatingly on the exposed abdomen, or toxins might be dissipated by properly supervised exercise.

Patient Diverted

Unfortunately, neither the easy explanation nor its therapy gets at the root of an emotionally conditioned problem, and any improvement achieved is temporary. The patient is diverted, not cured. The hard way is more tedious and less exciting, but in the long run, it does more for the patient. By plain words and simple analogy, the physician must explain to the patient how he can have pain or discomfort, or some minor symptom such as belching or constipation, without any underlying structural disease of the organs. If emotional factors play a role, the physician must also sell the patient this idea, but tactfully, and without implication that the patient is merely imagining his symptoms.

Patients with ulcerative colitis and regional enteritis are completely dependent upon the physician's psychological support. Some physicians have, therefore, proposed specific measures for building up the patient's ego and self-confidence, such as engaging the patient in a game of checkers or chess and making sure that the patient wins. My own opinion, however, is that no such artificial methods can succeed. Constant medical effort and constant personal interest are the ingredients that patients with enteritis and ulcerative colitis need to maintain their morale and hope.

Sound Drug Use

Finally, the physician may make sound use of the drugs now available to alter states of tension, anxiety or depression. By "sound use" I mean that an agent of this type is used not as isolated therapy but to support the main purpose of treatment, whether this is reassurance, the correction of faulty bowel habits, or the healing of an inflamed intestine. The anxious patient who is sent home not only with an adequate explanation but also with drugs that make him feel better is apt to *do* better than the patient whose persistent symptoms may make him forget the words of the doctor. Once fundamental improvement has been achieved, however, pharmacologic aids may well be omitted.

The older sedatives, as exemplified by the barbiturates, have little direct effect on the gut in less than hypnotic doses. Moderate and transient motor inhibition is sometimes effected by amphetamine. By and large, however, these agents should not be used for the purpose of affecting the gut directly; indications for their use must be based on their effect on the central nervous system.

Studies Carried Out

Reserpine, if anything, is said by some to have a stimulating action as far as gastric secretion and motility are concerned. In studies carried out by us, over-all gastrointestinal motility did not appear to be affected by chronic use of a rauwolfia alkaloid. Nevertheless, it would appear advisable to use these alkaloids only with considerable caution in patients with peptic ulcers.

Too little is known concerning the pharmacology of the many tranquilizing and ataraxic agents that are appearing on the market to give sound advice concerning their use in the digestive disorders that we have been discussing. For the treatment of peptic ulcer, they appear neither necessary nor useful. In patients treated successfully by surgery for chronic ulcer but suffering from the dumping syndrome, they may, on the other hand, make the symptoms more tolerable, although they do not affect the basic disorder. In ulcerative colitis and enteritis, tranquilizing drugs

may aid in giving the patient over-all support, but I have not detected any particular agent that is unusually beneficial, nor is there any consistent difference between the effects obtained by barbiturates and by the newer agents. Some patients do better with one, some with the other preparation. For the present, therefore, we must be guided by empiricism.

Tranquilizers Uncertain

In patients with functional disorders of the digestive system, the usefulness of tranquilizing and ataraxic agents is also uncertain because so little is known concerning their direct effect on the gut. I would hate to give an agent that might calm the psyche but stimulate the gut to a patient already suffering from excessive motility. On the other hand, the unpredictable does happen. I recently saw an inveterate sufferer from heartburn who was miraculously relieved after another physician had given her one of the tranquilizing agents.

The greatest usefulness for the newer tranquilizing agents would appear to be in treating those that suffer primarily from anxiety, the first group of gastrointestinal complainers that I discussed with you. Since anxiety is at the root of their troubles, any pharmacologic agent that offers some measure of imperturbability should help.

The Teenager — A Medical Enigma

By Burt Franklin Jenness, M. D., Director of Health Service,
Texas Western College, El Paso

Teenagers may become problem patients without demonstrable pathology, and apparently healthy youngsters under emotional stress may tax the patience and skill of the most conscientious doctor. In such cases the doctor may become social counselor, guidance committee, or family consultant as well as medical advisor to the patient.

Living as they do in that emotional interim between child and adult life, they often present a difficult and inconstant complex which even they do not understand and are unable to control. Their fast maturing endocrines are pouring their secretions into the flood tide of adolescence, and this glandular disturbance may be an important factor complicating the treatment of their simple maladies by introducing an emotional element into the cases.

The teenage youth is perhaps the greatest social problem in the home today, and as a patient probably the most difficult to treat. Teenagers are the victims of their growing pains, and the resulting emotional instability so upsets their bodily functions that they may become psychasthenic in their behavior. They seem to be erratic in thinking and action, and their imaginary symptoms and phobias may seriously handicap medical treatment.

Overwhelmed by emotions they may suffer from loss of sleep and malnutrition, or may become irritable and defiant with their elders. Hysteria is frequently seen in such cases. Emotional petulance is usually marked. Minor diseases and injuries and even serious respiratory infections are expected to be cured promptly by a "pill" or a "shot", and impatience runs high if return visits are necessary.

Not all medical cases of teenagers, of course, are complicated by emotional problems. They are especially prone to attacks of the mild upper respiratory infections, and some are treated for anemia, underweight, vitamin deficiency, acne and other manifestations of faulty diet or poor hygiene; but the percentage of serious acute organic disease in this generally healthy group is low, and of the chronic diseases still lower. Minor accidents are frequent but proper treatment difficult to accomplish.

Over a ten year period of teenage cases seen in a college clinic a large majority were complicated by emotional factors. In treating these cases it was found that the approach to each one is different, but it seems important that in every case the physician first seek the confidence of the patient, and in teenage practice this is not easy to do.

The juvenile mind is an inquiring one, and while the teenagers are emerging from the category of childhood they still want to know "what makes the watch tick", and they feel that they are entitled to know why they are given treatment for one part of the body when the symptoms are in another. This often misunderstood attitude of these young patients is, the author believes, the working of that very commendable mental process called learning, with different manifestations in youngsters who are probing their environment for knowledge they will so keenly need later in life.

Some of these patients, however, seem to be skeptical of any and all medical procedures. Some intensify their symptoms because of nervous tension worked up by fear of some impending calamity. Others minimize their ailments as only trifling discomforts and seek only assurance that they are not sick.

These contradictory phases of youthful behavior frequently seen in the clinic seem to be emotional conflicts of minds in the making, and to be exaggerated in young patients with neurotic tendencies. Such cases may be driven by somatic irritation of pain, or other peripheral response, to consult a doctor, but are swept by their emotions toward the paradoxical conduct they display in the physician's office.

If a few minutes are devoted to explaining to all teenage patients the reasons for what is being done, they become more co-operative in the treatment room. Skepticism is their challenge to the unknown, and throughout childhood and adolescence this challenge must be met patiently and kindly—even in the office of the busy medical practitioner.

General Principles in Surgery of Abdominal Trauma*

By George F. Peer, Colonel, M.C., William Beaumont Army Hospital, El Paso

In less than half a century, two great wars and a so-called police action have resulted in tremendous advances being made in the management of traumatic cases. This is particularly true concerning abdominal trauma. Prior to World War I a soldier who incurred an abdominal wound had very little chance of surviving his injury.

In fact, his chances of surviving were so small that surgeons were reluctant to waste time and effort, that could be directed to less severely injured patients, in operating upon him. However, a few surgeons, perhaps with more courage than many of their colleagues, did attempt to save the individual who had incurred an abdominal injury and as a result the mortality rate, which had been ninety per cent or more in the Civil War, was reduced to sixty-five per cent in World War I. In World War II the mortality rate was further reduced to approximately twenty-five per cent and in the Korean conflict it reached a level of approximately ten per cent.

Surgeons Better

What happened to bring about such a tremendous saving of lives? Surgeons were no better during the Korean conflict than during World War II. It is doubtful that any difference existed between the surgeons of World War I and World War II.

In fact, during all wars, much of the acute surgery is performed by relatively untrained surgeons. Only a few years elapsed between World War II and the Korean conflict, yet surgeons during the Korean conflict were able to reduce the mortality from abdominal wounds by approximately fifty per cent as compared to World War II.

The great saving in lives has resulted from many things but primarily from our realization of the importance of prompt and adequate resuscitation of the injured patient. Resuscitation involves principally the treatment of shock. We now know that the treatment of shock demands the use of whole blood and this in large amounts.

Time Lag Factor

Time lag (the interval between the time of injury and the time of operation) is an important factor in the mortality resulting from abdominal wounds. However, Colonel James Forsee of the 2nd Auxiliary Surgical Group, during World War II felt that the deleterious affects of abdominal wounds were not so much the result of delay in instituting the operative procedure as it was the delay in instituting resuscitative therapy. In the later stages of the Korean conflict, warfare was stabilized permitting rapid evacuation of casualties.

Perhaps of greater significance was the action taken to combat shock by the early administration of a plasma volume expander, in many instances by aidmen, and by the administration of whole blood as far forward as the aid station. It was almost routine to have helicopters fly into the mobile surgical hospital with patients who were having blood administered to them during the period of evacuation.

Resuscitation

Since first consideration in the management of patients having suffered abdominal trauma must be resuscitation, this aspect of management must be started promptly.

Resuscitation involves primarily the treatment of shock, so the administration of blood, or of a plasma volume expander until blood is available, must begin immediately and continue until the general condition of the patient warrants removal to the operating room and thereafter as needed.

If it seems impossible to get the patient's blood pressure stabilized at a favorable level, it may be necessary to take the patient to surgery immediately. The operation is considered an anti-shock measure in itself. If there is no response to the usual resuscitation procedure one must consider common causes for very severe and continuing shock:

1. Continuing hemorrhage.
2. Active peritoneal contamination with peritonitis or in wounds of the buttocks and rectum, pelvic cellulitis or anaerobic myositis or cellulitis.
3. An extensive evisceration.
4. Blast injury of the lung, heart, abdomen or brain.
5. Other severe wounds.

Generally in those cases who must be taken to surgery while still in shock, there is continuing intra-abdominal hemorrhage. Likewise, if there is massive fecal contamination of the peritoneum, closure of the intestinal wound thereby putting a stop to the continuing contamination, will be of great help in combating shock.

Careful Examination

During the period of resuscitation as the general condition of the patient improves he is carefully examined. It is important to reconstruct, if possible, the actual sequence of events leading to the wounding of the patient.

*From Symposium on Surgery in Acute Trauma delivered at William Beaumont Army Hospital, April 1956

It is helpful to get some idea of his position when struck because position has much to do with the path of the missile. When one knows the point of entrance of the missile and the position of the patient at the time, one can predict with a high degree of accuracy the exact missile damage.

It is well to bear in mind when examining the patient that the point of entrance of the missile does not necessarily have to be on the anterior abdominal wall to involve the abdomen. It is important to remember that the peritoneal cavity has a top, bottom and back, and that a missile wound of the back is just as apt to involve the abdomen as a wound of the anterior abdominal wall.

In making the examination, the presence of associated injuries should be borne in mind. One should particularly be aware of the possible existence of injury to the central nervous system.

Important Consideration

Whether or not an intra-abdominal viscus has actually been injured is an important consideration, because this fact largely determines the necessity for laparotomy. It is not always an easy decision to make. The physical findings of a patient who has suffered an intra-abdominal injury usually includes in addition to shock, abdominal tenderness, rigidity and absence of peristalsis.

These same signs and symptoms may be found, however, in a patient with wounds in the chest, spine, pelvis, and soft tissues about the abdomen. In addition to the physical examination a routine urine analysis is important to rule out an otherwise unsuspected injury to the genito-urinary system. Often by rectal examination the presence of fresh blood is discovered indicating injury to the lower part of the intestinal tract.

In addition to the physical examination an x-ray of the abdomen is of great help particularly if the missile has been retained. The knowledge of the exact point of entrance and the location of the missile as shown on the film is of great help in determining whether the peritoneum has been penetrated. The presence of free air in the peritoneal cavity indicates perforation of a hollow viscus.

Preoperative Preparation

Once the decision for surgery has been reached, preoperative preparation of the patient must begin. Special measures applicable to patients with abdominal wounds include gavage of the stomach followed by suction drainage of the stomach, bronchoscopy if there is tracheo-bronchial obstruction, and beginning administration of antibiotics. A catheter should be placed in the bladder and left there.

At surgery ether is the anesthetic agent of choice and preferably administered through an endo-tracheal tube with a closed system. It affords relaxation of the patient and prevents aspiration of foreign material during operation.

A vertical abdominal incision affords the best exposure, is easiest to extend to permit examination of the entire intestinal tract, and is the least liable to complication. It may be mid-line or paramedian. This incision can be extended laterally if the need arises.

A short, laterally placed secondary muscle splitting incision following the direction of the fibers of the external oblique muscle will allow for stab wound drainage, exteriorization of an injured colon, or colostomy away from the operative incision.

Rapid Exploration

A rapid and systemic exploration is carried out to determine the sites of injury and the indicated corrective procedures. Serial examination of small intestine must be done, carefully delivering the intestines on warm moist packs on the abdominal wall when necessary.

This is followed by an examination of stomach, duodenum, liver, gallbladder, pancreas, and spleen. The gastrocolic omentum must be opened. The colon is then examined. The suspected area of injury is approached last unless hemorrhage is encountered. Tension on the mesentery of the small intestine is to be avoided.

Finally the bladder and kidneys should be examined and a search made for retro-peritoneal hematoma. Wounds most often overlooked are those located at the junction of the mesentery with the small bowel; along the curvature of the stomach; on the posterior surface of the stomach; in the duodenum; in the transverse colon including the flexures; in the pelvic portion of the colon and the rectum.

Drainage Imperative

Before closing the operative wound, consideration must be given to drainage of the peritonel cavity. All wounds of the liver and biliary passages and of the pancreas must be drained. Drains should be brought out through stab wounds in the lateral abdominal wall or flank.

Wounds of the extra-peritoneal portion of the colon or of the duodenum must be drained through stab wounds. For dependent drainage of posterior lateral wounds of the abdomen incisions are made in the loin. In all instances soft rubber Penrose tissue drains are the drains of choice.

In the management of mass casualties closure of the abdominal operative wound is best accomplished by through-and-through wire placed 3 cm from the wound margin and 3 cm apart and approximated

without tension usually passing through small rubber tubing and tied to avoid cutting into the skin.

Postoperative care is directed toward keeping the circulating blood volume up to an approximately normal level. Water, electrolyte, nutritional elements and vitamins should be maintained and balanced. Naso-gastric suction should be maintained until intestinal function has been restored, usually for a period of about 72 hours. Antibiotic therapy is used routinely.

No Radical Change

There has been no recent radical change in abdominal surgery. In principal all small bowel injuries should be closed when possible, and when the blood supply is adequate. All large bowel injuries should be exteriorized by the simplest method possible. Injuries below the rectosigmoid which cannot be exteriorized must be closed and a complete diversion of the fecal stream carried out proximally to the sutured area.

Combined thoracic and abdominal wounds constitute the greatest surgical problem. The patient must have very adequate resuscitation and special attention must be given to anesthesia. Finally, confronted with dual lesions, one must determine whether both can be done at the same sitting. If they cannot, usually the abdominal procedure must take precedence. Most of the thoracic wounds can be temporized with. However, in most instances of dual lesions both can be taken care of at once in which case thoracotomy, if necessary, takes precedence.

A New Nonmercurial Diuretic

ROLICTON(R) (Aminoisometradine),
—Settel, E.: Postgrad. Med. 21:186 (Feb.) 1957

Rolicton(R) (amisometradine), a new oral, nonmercurial diuretic agent was studied by the author in 47 patients. It is believed that the drug acts by preventing reabsorption of sodium in the renal tubules by interference with the sulfhydryl enzyme system. Laboratory and clinical evidence indicates that sodium and chloride ions are excreted in about equimolar quantities, the excreted sodium carrying proportionate quantities of water with it.

Forty-four of the 47 patients in this study were classified as class two to four cardiacs. The remaining three patients had premenstrual tension and edema.

Various Diuretics

Thirty-six of the 44 cardiac patients had been taking various mercurial and nonmercurial diuretics orally during the two years before this study. Because of intolerance to these preparations (rashes, nausea, vomiting and diarrhea) or owing to their ineffectiveness, most of these patients had ceased to take these drugs or had been taking them only sporadically.

Rolicton was administered orally for 12 to 16 weeks, and the dosage adjusted to the response of each patient. Results were highly satisfactory. During the first five days of treatment, the patients lost an average of 3.4 pounds. In the first 24 cases in which the drug was used, 200 mg. was administered three or four times a day. The average loss of weight in these cases was 2.9 pounds. When treatment was begun by administering 500 mg. of the drug, the average loss of weight was 4.2 pounds in five days.

There was an obvious stabilization of "dry" weight in practically all of the 47 cases. There also was an immediate improvement in the associated symptoms both in the 44 cases of congestive heart disease and the three cases in which edema was associated with premenstrual tension. Mood and morale improved markedly. The patients with premenstrual tension were enthusiastic about the relief of tension, nervousness, anxiety, headache and swelling.

Most spectacular and welcome from the patients' point of view was the marked reduction in the necessity for parenteral administration of mercurial diuretics.

There was a decrease of approximately 88.7 per cent in the number of injections required. This reduction released nurses for other duties and spared patients the pain of repeated injections. The drug was exceptionally well tolerated.

Summary

In summary, the author states that Rolicton is an effective, safe, nonmercurial diuretic which can be administered orally. It appears to be the drug of choice for treating long-standing edema. It apparently was tolerated better than other oral diuretics which had been administered previously in this group of patients. In addition, it produced diuresis more promptly and maintained "dry" weight satisfactorily for long periods with small doses.

Clinical Note on "Painful Ovaries"

By Joseph B. Raddin, M. D., Phoenix

Women of all ages who complain of pelvic pain and backache are often informed by physicians that their distress is due to "painful ovaries." Furthermore, even young women are advised all to frequently that the only possible cure is removal of one or both ovaries.

I have recently treated several girls in their early twenties who were submitted to the tragedy of castration for "painful ovaries." One girl was nineteen years of age, the mother of two children, at the time of her operation! None of her pelvic pains or backache were relieved by castration. A severe "psychoneurosis," due to castration hormone imbalance, now complicated her continued ill health. A lifelong burden of hormone substitution therapy, which will not subside for many years, if ever, was added by the castration operation.

Hormone therapy will never completely compensate for castration. Removal of just one ovary is not an innocuous procedure. Every surgeon is well advised never to remove ovaries except for carcinoma. In over twenty-five years of practice, I have advised removal of only one ovary. That was twenty years ago for a "chocolate cyst" of an ovary.

Today that ovary could be saved by appropriate hormone medication. When a surgeon offers the excuse for removing an ovary that it was cystic, or the operation was performed only after "failure of hormone therapy," the hormone therapy was not appropriate or competent and castration can seldom be justified, based on post-operative health.

Diagnosis

When a normal ovary is squeezed between palpating fingers, pain is felt. Pressure on any normal ovary is painful and can be compared to the sensation felt by any man when a testis is squeezed with equal pressure. Ovaries and testes are both naturally sensitive to pressure and that fact does not denote the presence of any pathology. In women it does not account for pelvic pain.

The error in diagnosis seems to arise from the manner in which the vaginal examination is performed. Careful speculum and bimanual examination will reveal the fact that motion of the cervix is the cause of the pelvic distress and backache. Gentle vaginal inspection will demonstrate that when the cervix is moved the "ovary pain" is produced. It is not necessary to squeeze the ovaries to elicit the pelvic pain so frequently diagnosed as "painful ovaries."

Endocervicitis is the most common cause of this type of pelvic pain often called "ovary pain." There are few exceptions to the general statement that practically all vaginal discharges are due to infection of the cervical canal glands. Even with trichomonas and monila infestations, therapy to the cervical glands is mandatory for cure.

A woman was seen recently in whom supravaginal hysterectomy and the removal of her coccyx gave no relief for pelvic, back and leg pain. She wisely refused castration (which had been advised). Therapy to the cervical canal gland infection in three months completely relieved all complaints due to pelvic cellulitis in this young woman who had been completely disabled for 16 years (from 19 to 35 years of age) with back and leg muscle pains. Since she still has her ovaries, substitution therapy will not be necessary. Patients with similar histories are encountered by physicians regularly and are as regularly labeled as being "neurotic."

Comment

Pain from endocervicitis radiating from the infected cervix by the utero-sacral ligaments to the sacral region often simulates coccygodynia, sacro-iliac arthritis, or sciatica.

Pain passing along the broad ligaments from the cervix is felt as "hip" pain in either or both joints and is especially confusing on pelvic bimanual examination with true ovary pain.

Pain transmitted along the round ligaments is felt low anteriorly and is often believed by the woman herself to be caused by, or actually, "ovary pain."

Pelvic pain or distress due to primary ovarian pathology is rare. Today painful ovarian "chocolate cysts" can be treated with hormone medication and the ovary will resume normal function. Simple cysts need only be punctured, if any surgery is needed, unless huge.

Most pelvic pain is due to endocervicitis. Therapy to cure the cervical canal gland infection is essential for cure. Castration is not indicated. Supravaginal hysterectomy does not relieve the pelvic distress because the cervix is retained. Even when total hysterectomy has been performed the pelvic cellulitis is not cured and vaginal treatments are needed to relieve what is also called pelvic parametritis.

Conclusion

Careful and painstaking gynecological diagnosis, hormone therapy and treatment of endocervicitis will render most pelvic operations with removal of one or both ovaries and the uterus entirely unnecessary. The critical diagnostic maneuver is whether or not the pelvic pain (the supposed "ovary pain") is elicited by movement of the cervix. When endocervicitis is present, the correct diagnosis should be promptly suspected and treatment to the cervix instituted, not castration or hysterectomy. "Painful ovaries" is rarely a correct diagnosis.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

July 18, 1957

Frederick P. Bornstein, M.D. — Editor — Case No. 839
Presentation of Case by Dr. Nathan Kleban

History — Dr. Rita Don:

C.C.: Weakness, fatigue, chills and low grade fever almost every night for one year's duration.

P.I.: The patient was a 47 year old white male cotton picker who was admitted to El Paso General Hospital on March 3, 1957. On admission he stated that for the past year he had been feeling weak and tired, with a low-grade fever almost every night preceded by a chill. For the past six months he had noticed a dull aching pain in the sacral region. During the past three weeks he had had a dry, hacking cough, most pronounced at night, and he had suffered swelling of his feet and ankles. For the past two weeks he had a swollen right elbow and swelling of both hands.

P.H.: The patient had influenza one month prior to admission, pneumonia one year ago, and spinal meningitis in 1950. He was a heavy cigarette smoker. He did not consume alcoholic beverages.

F.H.: His father died at 74 years of age with heart trouble. His 89 year old mother, four brothers and one sister are living and well.

Physical Examination:

Physical examination on admission revealed an extremely pale, chronically ill white male. B. P. 120/60, P. 100, R. 48, T. 99.8.

Pupils were round, regular, equal, and reacted to light and accommodation; funduscopic examination of the right eye showed a crescent-shaped hemorrhage in the right upper quadrant and an organizing hemorrhage inferior to the disc; flecks of blood were noted in both nares.

Chest was clear to palpation, percussion and auscultation. Heart: regular rhythm, no cardiac enlargement or murmurs. Abdomen: epigastric tenderness on palpation, liver and kidneys not palpable, spleen palpable four cm. below the left costal margin, normal bowel sounds, right inguinal hernia. Extremities: 2+ pitting edema of feet and ankles. Lymph nodes: no adenopathy. Neurological: physiologic.

Hospital Course:

The patient's course in the hospital was generally poor and gradually down hill. While in the hospital he received 18 units of whole blood. Following the blood transfusions he would improve for a day or two in regard to his complaints of weakness and fatigue. Then he would rapidly decline.

On March 28 the patient developed a petechial rash on the left side of his forehead and face and both upper extremities. On April 10, 1957 the patient showed generalized edema. April 19, 1957 the patient spiked a temperature to 104 (prior to this time he had been afrebile) and complained he was unable to talk or swallow. Examination revealed edema of the pharyngeal mucosa and small purulent patches on the tonsils.

On April 22, 1957 his B. P. suddenly dropped to 70/20 and the patient was perspiring profusely and complaining of extreme shortness of breath. Despite whole blood and normal saline solution with Levophed he expired at 4:55 p.m.

Throughout the patient's stay in the hospital he received multivitamins and Penicillin 600,000 units b.i.d., Phenergan expectorant with codeine intermittently for his cough. Beginning March 23, he received meticorten 30 mgs. daily, March 28 diamox 250 mgs. daily, April 1 Sparine 50 mgs. every four hours, April 10 Achromycin 250 mgs. q.i.d. and ascorbic acid 100 mgs. q.i.d.

Laboratory:

X-rays:

March 3: Chest — Healthy Chest.

March 4: Right elbow — elbow negative for evidence of fracture.

March 4: Upper GI: Findings consistent with duodenitis; an ulcer cannot be excluded; inguinal hernia on the right.

March 8: Pelvis: Pelvis negative for evidence of metastasis.

March 22: Barium enema: Colon negative for evidence of polyps, obstruction or malignancy.

March 25: Skeletal survey: "Skeletal survey negative for evidence of bone pathology.

Laboratory studies:

March 3: Hb. 4.4 gms., Ht. 14, WBC 24,500, segs. 13, lymphs. 85, eos. 2

March 4: Hgb. 5.5 gms., Ht. 20, WBC 16,300, segs. 6, stabs. 2, juveniles 1, lymph. 89, monos. 1, baso. 1

Van den Bergh — Direct 0.2 mg. %

March 5: V.D.R.L. negative

March 6: Hgb. 5.9 gms., Ht. 21

March 11, 1957: Hgb. 7.4 gms., Ht. 26, WBC. 14,250, segs. 20, lymphs. 77, mono. 1, Eos. 2

March 12: Stool examination: Ocult blood 1 + — no ova or parasites found

March 12: Gastric washings — Free HCL — 0° Total acidity 7° No AFB seen

March 15: Hgb. — 7.0 gms., Ht. 26, WBC 9,300, segs. 9, lymphs. 91

Bone marrow biopsy, right iliac crest: "Bone marrow fibrosis"

Stool culture: Negative for pathogens

March 17: Hgb. — 7.4 gms., Ht. 25

March 18: Electrocardiogram: Within normal limits

March 19: Coombs test: Direct, negative; Indirect, negative

March 19: B.S.P.: 0% in 45 min.
Thymol turbidity: — 3.5 units
Total proteins: — 6.1 gms. %
Albumin: — 3.8 gms. %
Globulin: 2.3 gms. %

March 22: Hgb. 6.8 gms., Ht. 22, WBC 12,900, segs. 5, myeloblast 1, lymphs. 93, mono. 1, eos. 1

March 29: Urinalysis: Reaction neutral, S.G. 1,010, albumin and sugar negative, microscopic negative

April 11: Hgb. 3.8 gms., WBC 12,000

Urinalysis: Reaction acid, S. P. 1.012, albumin and sugar negative, microscopic negative

April 12: Hgb. 4.6 gms., Ht. 16, WBC 7,900, segs. 3, stabs. 1, juveniles 1, myelos. 1, Lymph. 94 — platelet count, too few to count

April 13: Hgb. 5.8 gms., Ht. 21

April 16: Hgb. 6.2 gms., Ht. 24

X-Ray Discussion — Dr. Vincent Ravel:

We have two examinations of the chest, neither one of which show any significant changes, particularly in regard to the bony architecture of the thorax, in view of the fact that there was a possible metastatic disease. The cardiac silhouette appears natural and shows no significant changes.

The upper GI series reveals an irregularity of the duodenum that would suggest a duodenitis; and I would like to call particular attention to the fact that the stomach is somewhat displaced by this soft tissue mass in the left upper quadrant, representing the spleen.

We did a complete skeletal survey and found no evidence of metastatic disease, there was no evidence of blood dyscrasis, we could see nothing suggestive of a lymphoblastoma or a leukemia.

The only thing we can say is, (1) he has an enlarged spleen; (2) he has no evidence of metastasis; (3) he has a duodenitis; and (4) he has an inguinal hernia.

Clinical Discussion: Dr. Nathan Kleban:

A respiratory infection which was termed pneumonia apparently was the beginning of this 47-year-old agricultural worker's illness one year before his death. We are not aware of exposure to irradiation, or to any type of drug which could have had an unfavorable influence on his bone marrow. Whether or not his smoking had an adverse effect on his life, we do not know because as yet there have been no statistical reports.

The meningitis which he had in 1950 was probably unrelated to his final and terminal illness, although it would have been of interest to know what his blood picture was, and whether his spleen was palpable. Following the respiratory infection one year before his death, the patient noted a sense of tiredness, evening chills, feverishness; on several occasions, six months before admission he noted black stools, and after this he began to experience a pain in the sacral region.

There was another chest illness several months before admission which was termed influenza with a residual non-productive cough, worse at night; and about that same time swelling of his feet and ankles and orthopnea developed, which suggests congestive heart failure. In addition the patient lost his appetite, vomited several times. On several occasions the vomitus contained small amounts of blood; and he noted swelling of his hands and of his chest elbow for several weeks before he was referred to this hospital from Alamogordo.

Significant Findings

The significant physical findings on admission were as follows: there was a low grade fever present which, contrary to the protocol, continued to be intermittently present throughout his hospital stay. It was not characteristically Pel-Ebstein, or undulating in pattern. Striking pallor, evidence of capillary retinal and nasal mucosal bleeding, epigastric tenderness and moderate enlargement of the spleen were noted.

There was a right inguinal hernia, diagnosed by physical examination and radiographically. There was pitting edema of the lower extremities. There was a surprising absence of heart murmurs, lymphadenopathy, and rales; no swelling of the hands and right elbow were noted.

The outstanding laboratory findings were the profound anemia, with a hemoglobin of about four grams. The anemia apparently was a normocytic, slightly hypochromic one. At this point, since there is no one to say nay, and this is a discussion by substitutes, I will ask Dr. Don to describe the morphology of the red cells, which is an important piece of information available neither on the chart nor on the protocol.

Dr. Rita Don:

The morphology of the red cells in the peripheral smears was as Dr. Kleban has already mentioned. They were normal in size with rather marked hypochromia.

Dr. Kleban:

There was initially a leukocytosis of about 24,000. The total white count diminished over a period of several days, and along with the decrease in total white count the patient received Penicillin and at the same time received transfusions, with an increase in his red blood cells.

Surprisingly, the differential count showed a predominance of lymphocytes, which was reported throughout his hospital stay, with no comment as to anything being unusual or out of the ordinary about them. They were simply reported as lymphocytes and the differential count was in the neighborhood of 80 or 90 per cent. There were no platelets reported in one attempt to count platelets. There was no evidence of hemolysis.

One stool contained 1+ occult blood; there was a single notation in the nurses' notes that there was one black stool, and several other notations of normal colored stools. To begin with he apparently lost a small amount of blood from his gastrointestinal tract, but he had no continuous massive bleeding.

The electrocardiogram was normal. The liver function studies were normal. The urine was not remarkable. The Coombs test was negative, both direct as well as indirect. This is fairly good evidence that there was no acquired hemolytic process, either as part of his initial illness or subsequent to the administration of the 18 units of blood which he received.

Throughout his hospital stay there was a low grade fever of around 100 - 101. There were several days when apparently he was free of fever prior to the elevation of 104 mentioned in the protocol. The patient complained bitterly of pain in his back, in his legs, in his abdomen, and in his chest.

Continuous Cough

There was a continuous non-productive cough. There were minor epistaxes. Petechiae were noted. The edema present in the lower extremities ascended and before his death the edema extended all the way up to the top of his head. During the last few days the patient began to complain more and more bitterly of pain in his throat and inability to swallow. We can assume that he developed a very severe pharyngitis and laryngitis.

His blood pressure began to drop on the last hospital day. He became cold and clammy, complained of severe dyspnea, and despite Levophed and blood transfusions he died. It would seem that he developed a pneumonia, undoubtedly his anemia was more severe, and whether or not he was in congestive failure as well we don't know.

Clear-Cut Situation

There seems to be a fairly clear-cut situation here. We were even given the bone marrow biopsy; the needle aspiration was unsatisfactory for examination and Dr. Casiano performed a biopsy which, as indicated on the protocol, revealed fibrosis, although the report on the chart states that there were lymphocytes and plasma cells seen as the only cellular elements.

The working diagnosis by Dr. Davidson and the house staff eventually was myelofibrosis. It seems to me that three things need to be considered: (1) Myelofibrosis, or agnogenic myeloid metaplasia; (2) Aplastic anemia; (3) Leukemia.

Aplastic Anemia

Wintrobe states that in aplastic anemia the spleen is almost never palpable, and there is almost never myeloid metaplasia or extra-medullary hematopoiesis. In aplastic anemia, however, the leukocytes are depressed and lymphocytes predominate. Now in view of the predominance of the "lymphocytes," we would have to say that this is strong evidence in favor of an aplastic anemia, with the palpable spleen being against it.

However, the bone marrow biopsy was in favor of a myelofibrosis, and the fact that the spleen was enlarged again is in favor of this being a myelofibrosis or myelophthisic anemia, with invasion of the bone marrow by some cell which does not ordinarily predominate there.

In myelofibrosis, anisocytosis and poikilocytosis are almost characteristic morphological features. Their absence in this patient is evidence against agnogenic myeloid metaplasia.

It is a difficult problem frequently to determine whether or not there is an agnogenic myeloid metaplasia or a myelogenous leukemia. There is nothing in favor of a myelogenous leukemia here because we have a predominance of "lymphocytes."

This raises the question, are these lymphocytes or not? Were we given, as far as the chart is concerned, as far as the protocol is concerned, an accurate interpretation of those cells? Well, to me, this is not a rhetorical question, because I have subsequently found out the answer from Dr. Don. Do you want to say anything about those cells as far as the peripheral blood is concerned?

Dr. Don:

In the differential counts the interpretation here of lymphocytes is actually an error. These cells were not, at least we believe, of the lymphocytic series, but immature granulocytes instead and also immature cells in the erythrocytic series.

Dr. Kleban:

So the new evidence that we have, that these were not lymphocytes, closes the problem of "was this a myelofibrosis with agnogenic myelogenous metaplasia, myeloid metaplasia, or was this a myelogenous leukemia?" To decide between the two we need to know what is in the bone marrow, to determine whether or not there is a hiatus in the development of cells. We don't have that information.

In agnogenic myeloid metaplasia, there is splenomegaly, usually anemia, and leukopenia, but thrombocytosis rather than thrombocytopenia is usually present. Generally the diagnosis is made on the basis of bone marrow, finding the medullary substance replaced by proliferation of the connective tissue stroma.

There are about four different theories concerning the nature of this process. Dr. Damashek, I believe, gave his opinion when he was here at Providence Hospital in discussing thrombocytopenia. There are some people who feel that this disease is related to thrombocytopenic purpura, to myelogenous leukemia, to polycythemia vera, in that they represent different manifestations of proliferation of all of the bone marrow, reticulum cells as well as stromal cells. The situation that arises is that the continued reproduction of the fibrous tissue presents the picture which is seen.

Now the question which arose during this patient's life, and which is the reason for keeping the surgeons here, is: should there have been a splenectomy? It used to be said that splenectomy is almost invariably fatal, because where the bone marrow is not capable of producing cells, the cells are being produced in the spleen instead, and possibly in the liver as well as in the rest of the reticulo-endothelial system.

There were reports that patients did poorly and that on theoretical grounds splenectomy was contra-indicated. Subsequently there have been reports that it is indicated.

There have been other reports that people do no better and no worse with splenectomy than they do without splenectomy. What would be a particular indication? Well, evidence of a hemolytic anemia would be evidence in favor of hypersplenism.

There is no evidence in this particular patient of a hemolytic component. However, I think that most people would probably agree that if a hemolytic component were contributing significantly to the picture, or if thrombocytopenia were a more serious factor than the depletion of red cells and white cells, splenectomy might be indicated.

Dr. Jack Postlewaite:

My impression is we might track this down as a problem of differential diagnosis in thrombocytopenic purpora. There are multiple classifications of causes of thrombocytopenic purpora which one must keep in mind. In addition we have to correlate this to the end result of myelofibrosis which may have produced the same symptoms as an exhausted bone marrow. As to etiology, four major classifications should be considered: degenerative, infectious, metabolic and neoplastic.

As to the infectious etiology, the man has a good history of respiratory system infections. The X-ray is vague in giving us a clue but this is not unusual. In this area we have malnutrition with tuberculosis as an etiology. Brucellosis is another one but I am not aware that Brucellosis terminates as thrombocytopenic purpora except due to treatment.

The metabolic type of purpora is essentially a manifestation of hypersplenism. This man had an enlarged spleen. He had a depressed exhausted bone marrow and he had abnormal cells and, terminally, hemorrhage with anemia.

The fact that he did not respond to cortisone is good evidence that we are not dealing with hypersplenism per se but perhaps a secondary type. Degenerative types of bone marrow and degenerative types of thrombocytopenic purpura are often toxic; and I suspect that hormones, Penicillin, certainly phenobarbital, all other sedatives, tranquilizer pills, or happy pills, have created this problem for us.

These patients improve when these agents are discontinued. However, there is no indication that this man had continuous therapy prior to admission. The neoplastic causes of thrombocytopenic purpura are multiple. This man could have had carcinoma or carcinomatosis but the absence of masses, or metastases and the fact that the bone marrow was negative for malignant cells, speak against this possibility.

Clinical Diagnosis: Myelofibrosis with myeloid metaplasia.

Dr. Kleban's Diagnosis: (1) Myelofibrosis with agnogenic myeloid metaplasia; (2) question of myelogenous leukemia; (3) severe pharyngotracheitis and pneumonia as terminal events, and (4) possible congestive heart failure due to anemia and unknown factors.

Pathological Diagnosis: Myelogenous leukemia.

Pathological Discussion: Dr. Rita Don:

First I should like to know the bone marrow biopsy that was obtained while the patient was still with us. This was interpretated by Dr. Bornstein as being indicative of fibrosis of the bone marrow, with fibroblasts proliferating and an absence of the normal cellular structures.

On autopsy the body was that of an extremely pale looking, elderly white male. Except for the extreme paleness of the skin, the external exam-

ination was not remarkable. There was no jaundice or hemorrhage. The positive pertinent findings on autopsy were small petechial hemorrhages throughout all organs.

The main pathologic abnormalities were grossly enlarged liver and spleen. The liver weighed 3500 grams, the spleen weighed 2000 grams and measured 35 cm. in diameter. On gross examination the bone marrow appeared to be markedly hypoplastic, was gritty in nature, and didn't contain the normal amount of red pulp. On microscopic examination the liver and spleen showed evidence of extra-medullary hematopoiesis.

It is interesting to note that there was an absence of megakaryocytes in both the liver and spleen. Contrary to what we thought while the patient was living, and at gross examination at autopsy, the bone marrow was not aplastic but hyperplastic and contained a large amount of immature cells of the myelogenous series with some erythroid hyperplasia.

Final Diagnosis

So the final diagnosis of this patient is myelogenous leukemia as evidenced by the findings in the ribs, sternum, iliac crest and the vertebrae, with myeloid metaplasia and extra-medullary hematopoiesis of the liver and spleen. Apparently the patient did have myelogenous leukemia. Why it was not picked up on aspiration of the bone marrow or bone marrow biopsy I cannot say. The evidence at autopsy shows that he did myelogenous leukemia. In retrospect the most significant factor which favors this diagnosis as opposed to agnogenic myeloid metaplasia is the absence of megakaryocytes in the areas of metaplasia in the liver and spleen.

Editorial Comment:

This case was picked for Clinical Pathological Conference mainly to demonstrate the problems in a field where our ignorance is considerable and our knowledge is scant. The evidence here suggests a differential diagnosis of agnogenic myeloid metaplasia versus myeloid leukemia.

In addition there are hematologists who feel that a sequence of events starting with a nearly fibrotic bone marrow and ending with a hyperplastic one does not belong in either of these classifications.

They prefer to interpret such processes as reactive hyperplasias of a previously damaged bone marrow.

This concept would at least explain why the first bone marrow biopsy showed an aplastic and nearly fibrotic bone marrow. This observation is added to make it clear that at the present state of knowledge, no final classification of this group of diseases has been arrived at.

Future observations are needed to clarify the nosological relations between myelogenous leukemia, reactive hyperplasia of the bone marrow and extra-medullary hematopoiesis.

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Southwestern MEDICINE

VOL. XXXVIII OCTOBER, 1957 No. 10

Edited by Andrew M. Babey, M.D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Truths and Concepts Concerning The Cardiovascular System

(Continued)

Rheumatic Pneumonia

26. "There is, as you know, a form of pneumonia called "rheumatic pneumonia" which sometimes occurs with all the physical and rational signs of inflammatory pneumonia. . . . But that which gives this kind of pneumonia its distinctive character and makes it a species, is that all the symptoms of pneumonia may suddenly disappear without the gradual decrease observed in inflammatory pneumonia."—A. TROUSSEAU, *Clinical Medicine,* 2: 663, 1882.

27. "I owe my reputation to the fact that I use digitalis in doses the text books say are dangerous and in cases that the text books say are unsuitable." —(Quoted from WENCKEBACH), *Lancet,* 2: 633, 1937.

28. "A child with a very pronounced bruit of congenital heart disease may lose that bruit as it grows up."—HERBERT FRENCH, *Clin. Jour.,* 47-48: 149, 1918-19.

Warm Feet

29. "Warming or heating a normal foot increases the circulation of it. When, however, the arteries of the foot are diseased, little or no increase of flow may be brought about, but it is quite certains that the warming or heating will increase the metabolism of the tissues and this increases the blood flow requirement. . . . The circulation of the foot should be increased by warming the subjects trunk and thighs."—SIR THOMAS LEWIS, *Vascular Disorders of the Limbs,* H. Lewis & Company, London, 1936, page 49.

30. "There are no known substances that can be safely used to produce an adequate and sufficiently persistent dilatation [of these diseased peripheral vessels]. There is no known remedy of this kind so persistently potent as warming of the body, and this is simple, economical and safe."—SIR THOMAS LEWIS, *Vascular Disorders of the Limbs, loc. cit.,* page 49.

Pulse Jump

31. "Next to aortic regurgitation, the largest pulse pressure and the biggest jump of the pulse that we see is in arteriosclerosis without any other lesion." — RICHARD CABOT, *Case Records, Case #6491,* 1920.

32. "The presence of this rub does not indicate that no fluid is present; for a pericarditic rub does not disappear on the occurrence of effusion the same way that a pleuritic rub does. Pericarditic fluid accumulates below and behind and pushes the heart forwards and upwards so that a rub may still be audible in the sternal region or to the left of it even when the pericardium contains a large amount of fluid."—HERBERT FRENCH, *Differential Diagnosis,* Wm. Wood & Company, Baltimore, 1936, page 258.

33. "One of the extraordinary things about congenital heart disease is the way it tends to abolish all second sounds. As a rule when we listen we hear just a systolic murmur. No first sound, no second sound; nobody quite knows why."—RICHARD CABOT, *Case Record #6132,* March 30, 1920.

Pulse Quickening

34. "If there is constant quickening of the pulse during deep inspiration, auricular fibrillation is not present."—(THOMAS LEWIS) LINDSAY, *loc. cit.,* page 77.

35. "Pulmonary infarction is a common complication of congestive failure from any cause but particularly when mitral stenosis is present. It is often overlooked. It may account for inability of a failing heart to respond to treatment."—H. LEVINE AND P. WHITE, *Arch. Int. Med.,* 60: 39, 1937.

36. "There is no essential difference in the clinical course of the patients with active bacterial endocarditis with or without bacteremia . . . except possibly that the nonbacteremia cases are more likely to develop renal insufficiency as an outstanding feature of their illness."—CHESTER KEEFER, *Ann. Int. Med.,* 11: 714, 1937.

(To be Continued)

"POINTERS"

From the Case Records of the Massachusetts General Hospital, 1955*
(continued)

11. "We do not believe that solitary myeloma per se exists as a disease; if myeloma is solitary, it is solitary for a period of years and then becomes multiple." loc. cit.; p. 779.

12. "Carcinoids of the appendix are rarely malignant; . . . . . carcinoids of the small bowel are frequently malignant; in fact they constitute more than 20 per cent of malignant neoplasms of the small bowel.

13. "Often in patients with cirrhosis, the insulin requirement is unpredictable and varies a great deal. They may have an exacerbation of the liver disease with less insulin requirement and improvement in the status of the liver with increased insulin requirement." loc. cit.; p. 913.

14. "It has been my brief experience that appendicitis is seldom typical and usually presents itself as a variation of the classic theme." loc. cit.; p. 915.

Some Factors

15. "The virulence of the organisms, the presence or absence of vascular occlusion in the appendix and the location of the organ itself—behind the cecum, in the pelvis, amongst loops of small bowel, free against the anterior parietal peritoneum and so forth—are some of the factors that influence the development of the process and the findings in any given case." loc. cit.; p. 915.

16. "According to a recent statement by Dr. Conrad Wesselhoeft sore throats are being indiscriminately treated with penicillin, thus disturbing the bacterial flora and cultural characteristics but not curing the disease, and diphtheria is being missed, with fatal results." loc. cit.; p. 1003.

17. "Hodgkin's disease or other lymphomas can involve the cecum; of 50 cases reviewed at the Mayo Clinic in 1933, 18 lymphomas appeared in the cecum, which was the commonest single location in the intestinal tract. They rarely erode and can produce an intramural defect, without erosion of the mucosa." loc. cit.; p. 1141

Evidence of Cirrhosis

18. "I should like to point out that evidence of cirrhosis points out danger in any abdominal operation. The surgeon frequently cannot operate as he would choose because of the tremendous vascularity, the portal hypertension and the difficulty in producing hemostasis. Every venule is a vein, and every capillary is a venule, so to speak." loc. cit.; p. 1142

19. "There is a belief that, when enough thyroid is given even to the patient with hypopituitarism, he may quickly show toxic manifestations of thyroid; but given a patient with hypopituitarism one can almost predict that there will be little or no effect from thyroid. It has certainly been my experience, and I think it is the experience in the literature, that the patient has a low basal metabolic rate but if he is given thryroid he shows very little change in the basal metabolic rate." loc. cit.; p. 33

Not Infrequently Seen

20. "An elevated serum amylase is not infrequently seen with the peripancreatitis associated with a generalized peritonitis." loc. cit.; p. 112

21. "Urine in the peritoneal cavity seems to excite a great deal less reaction, as judged by ileus and so forth, than intestinal contents from a perforated duodenal ulcer do" loc. cit.; p. 113

22. "According to some of the medicolegal literature rupture of the urinary bladder in persons who have been drinking is a well recognized event even though it is rare. It is stated in the literature that only a slight amount of trauma is necessary to rupture these distended bladders. The rupture, as in this case, is characteristically in the dome of the bladder." loc. cit.; p. 113

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*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. —Andrew M. Babey, M. D.

CURRENT THERAPY

Notes on Somatic Treatment in Psychiatry and Psychosomatics with Special Reference to Electroshock Treatment

By J. Edward Stern, M.D., and Ann Brennan Damiani, M.D., El Paso

The practice of psychiatry as an art is old; as a science it is young and primitive. Problems of physiology are still with us; it may be, as Papez has suggested, that part of the old olfactory system has evolved into an affective system; it may be, as the mathematicians like Wiener have suggested, that the brain is much more like a complex "thinking machine" than like the telephonic switchboard with which it used to be compared; it may be that facts of neurochemistry now wholly unknown will elucidate elusive problems in the investigation of depression and schizophrenia. So long as knowledge of etiology and classification remains rudimentary, all problems in statistical analysis and evaluation of treatment are practically meaningless.

In spite of all of the obvious difficulties, the practical management of psychiatric and psychosomatic problems has advanced to the point where much can be done for the patient in the office and in the general hospital. As an aid in organizing one's thoughts, it is sometimes worthwhile to sum up one's experiences and impressions; these impressions, of course, can be thought of only as tentative hypotheses, and therefore, continually subject to revision. The following comments are based upon an extensive, but not statistically validated, experience. As mentioned above, a statistically validated experience is not forthcoming at present.

Indications for Electroshock Therapy

Affective states constitute the prime indication for EST. These include: (1) psychotic depression, (2) manic excitement, (3) psychotic depression superimposed upon organic depressive states (e.g., cerebral pathology associated with senility, arteriosclerosis, and paresis), (4) psychotic and hysterical disorders with severe depressive features, (5) neurasthenia (which often is part of a depression), (6) severe obsessional and compulsive states with pronounced depression, (7) schizophrenia (if there are strong affective components). In addition, EST is indicated in cases of schizophrenia to relieve fixed distortions of reality, to reduce negativism and withdrawal, and to suppress auditory hallucinations. Physical deterioration and exhaustion, and the possibility of suicide are other indications for EST.

Kalinowsky and Hoch believe that the less the premedication, the safer the treatment. Most workers, however, try to increase the safety and comfort factors. Cardiovascular disease, demineralization of bone, excessive muscularity, and undue fear of the treatment are indications for premedication.

Medication

Atropine is needed in patients who salivate. Premedication with barbiturate alone probably does not reduce the severity of the convulsion; it does depress the respirations and raise the convulsive threshold. Anectine, in small doses, can be used to reduce the severity of the tonic convulsive thrust and to reduce apprehension; similarly, anectine can be used in large doses with barbiturate. If used with barbiturate, a trained anesthetist should be present to treat glottic spasm if it should occur and to administer oxygen by positive pressure until the respiratory muscles regain their function. On the other hand, curare acts for too long a time to be practical or safe. After the treatment, dramamine may be needed to relieve nausea and aspirin can be utilized to relieve headache.

Type of Current

As a rule, unidirectional and unilaterally applied currents do not produce the desired remission of symptoms in severe cases unless a large number of treatments, closely spaced, is given. After considerable experience, many workers have reverted to the use of the original alternating current, as described by Cerletti and Bini.

*Drs. Stern and Damiani are substituting this month for Dr. Jack A. Bernard, regular writer of this section.

With present techniques there is no absolute contraindication to electroshock treatment. Pregnancy, regardless of trimester, is not a contraindication; advanced arteriosclerotic vascular disease is also not a contraindication. One weighs the risks of the treatment against the risks—exhaustion, suicide, suffering—of the disease.

Method

The patient ordinarily fasts for at least two or three hours. About 250 to 400 milligrams of surital are given intravenously until the patient is asleep; 20 to 40 milligrams of anectine are given rapidly intravenously through the same tubing. After a lapse of 45 to 60 seconds, during which muscular fibrillations are usually observed to spread from the face downward, a quantity of alternating current is applied across the temples large enough to produce a mild clonic seizure. It is important to give this quantity of current; a subconvulsive amount leaves the patient feeling miserable in a way difficult or impossible to describe; it has no therapeutic value. Oxygen is administered by positive pressure beginning before the intravenous infusion is started or directly after the injection of anectine.

Mode of Action

The mode of action of electroshock treatment is unknown. Some statements, however, may be made. Effective treatment causes organic confusion and partial forgetfulness. In the course of this confusion the patient may deny, forget, or reconceptualize his griefs, problems, thoughts, experiences, delusions, and guilt feelings. New engrams (feedback mechanisms?) may supplant old ones. The treatment has been thought to produce a physically induced forgetting of troubles. The often remarkable effects of EST make one think of a possible biochemical basis for some cases of depression and hallucinatory experience. The treatment may modify pituitary function. It has not been proved that EST, conducted in the usual manner, damages the brain permanently. If, when a patient begins to recover from organic confusion, the symptoms recur, treatment must be reinstituted.

Summary

The prime indication for EST seems to be the symptom of depression. The treatment involves a calculated risk. It can be used as the starting point for psychotherapy by making inaccessible patients accessible. Obsessional, delusional, and hallucinatory experience can be suppressed at least in part. It is probable that the most important aspect of treatment which is presently overlooked is the use of judiciously spaced outpatient treatment on a follow-up basis, using whatever precautions may be indicated. When treatments are widely spaced, there is no significant grade of confusion; the patient's ability to work is not disturbed; reintegration into everyday life is accelerated. The only limitations to this procedure occur if there is no one to care for the patient on the day of the treatment and/or if the patient lives too far from the treatment center. Obviously, these limitations are not insuperable. It is just as logical to "taper off" over a period of weeks or months with this treatment as with any other.

Insulin

Insulin in subcoma doses is a useful adjunct to psychotherapy and EST. It improves the nutritional state and relaxes patients for EST. Deep insulin treatment (chemically produced lobotomy?) is still used for refractory cases of schizophrenia but it is becoming a controversial form of treatment. It is still used in young paranoid patients. Its use has been greatly diminished because the results are not long-lasting and because the method is much riskier and less convenient than EST. Coma must be of long duration and deep if significant improvements are to occur.

Drugs And Gases

Chlorpromazine and promazine are useful sedative drugs. Any drug, such as chlorpromazine, which can produce a neurological syndrome, sometimes even in small doses, is of course, of the greatest theoretical interest. Reserpine produces a tranquilizing effect; unfortunately, however, it is frequently complicated by and, more important, minor severe nasal congestion. Meratran, for improvement of mood, and frenquel, for the relief of hallucinatory experience, require further observation. Nitrous oxide has been used instead of pentothal for narcoanalysis and narcosynthesis. Carbon dioxide, a gas of the greatest importance in body chemistry, has been used for the treatment of neuroses according to the method of Meduna and with later modifications. Whether it amounts to more than a method of suggestion therapy remains to be seen. All of these agents require much more critical evaluation.

Psychotherapy

In spite of all that has been said and done, oral psychotherapy, time-consuming though it is, with manipulation of the environment and rapid reintegration into everyday life, remains the backbone of treatment. All of the other methods, interesting and spectacular though they may be, serve only the purpose of making the patient, either as an individual or as one of a group, rapidly accessible to as much of psychotherapy as he has the capacity to receive.

Footnote: This short summary of experience was prompted by brief articles and letters which appeared in "Modern Medicine" March 15, 1956. The authors were: W. C. Alvarez, A. E. Bennett, H. Forssman, W. L. Holt, Jr., W. Libertson, W. K. McKnight, T. F. Morrow, E. A. Weinstein. M. D. Thomas, M. D., El Paso, helped greatly in adapting the present procedure of EST to local requirements.

THE PRESIDENT'S COLUMN

An Important and Valuable Medical Meeting

By Celso C. Stapp, M.D., El Paso

We of the Southwestern Medical Association are very proud of our organization. It has weathered two wars and a depression, and one might say that it has lasted through two generations of practice of medicine. We are proud of our journal and its progress through this same time but more especially through the era since World War II. It is a fine medical journal and is growing rapidly.

The fellowship and exchange of medical knowledge that is presented at our meetings each year are valuable, not only for keeping abreast of medical knowledge, but also for knowing personally the practicioners of our large area. We have similar problems in the practice of medicine and can exchange practical solutions to those problems. At the same time it may be noted that on the roster of guest speakers are the outstanding minds in medicine in these United States.

Wisdom Heard

We not only hear their wisdom but also try and make them feel at home and we hope that they go home knowing that the Southwest is a great country. We feel that they go home hoping some day to come back again and be with us. Each year the number of visitors will be increasing and this attests to our meeting.

The El Paso County Medical Society is particularly proud to be host to the meeting this year and we feel that the program is a full and well rounded one. We invite you, our friends, to come and enjoy the meeting with us. If there is anything that you wish while here just ask and your wish will be our duty to comply.

Wives Invited

We also extend a very special invitation to the wives to come and enjoy the program of entertainment that the Auxiliary ladies have prepared.

I would like to take this opportunity to thank all those who have worked so diligently in helping prepare the program and arrangements for the meeting. I am sure that all will go as planned and hope that all of you will come to El Paso to the meeting.

DERMATOLOGY

Asterol Dihydrochloride In The Treatment Of Dermatophytosis Caused By Trichophyton Rubrum (Purpureum)

Wilson, J. W., et al., J. Invest. Dermat. 19:319, 1952

Sixty-one patients with trichophytosis due to *T. rubrum* previously resistant to therapy were treated for 1 to 50 weeks with Asterol* tincture and/or ointment. Excellent results were obtained in subjects with lesions involving glabrous skin. Lesions on the palms of the hands and soles of the feet were less responsive. Nail involvement materially reduced the efficacy of Asterol therapy. The authors point out that " . . . the low index of irritation and allergic sensitization make lengthy administration of the drug feasible".

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Clinical Clippings, January, 1953

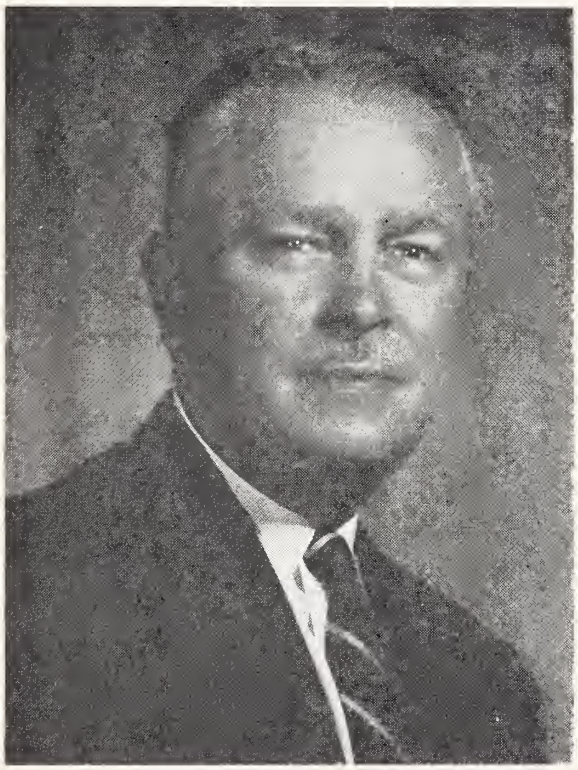
MEETINGS

Southwest Obstetrical and Gynecological Society Will Meet in Las Vegas, Nevada, Nov. 4 and 5

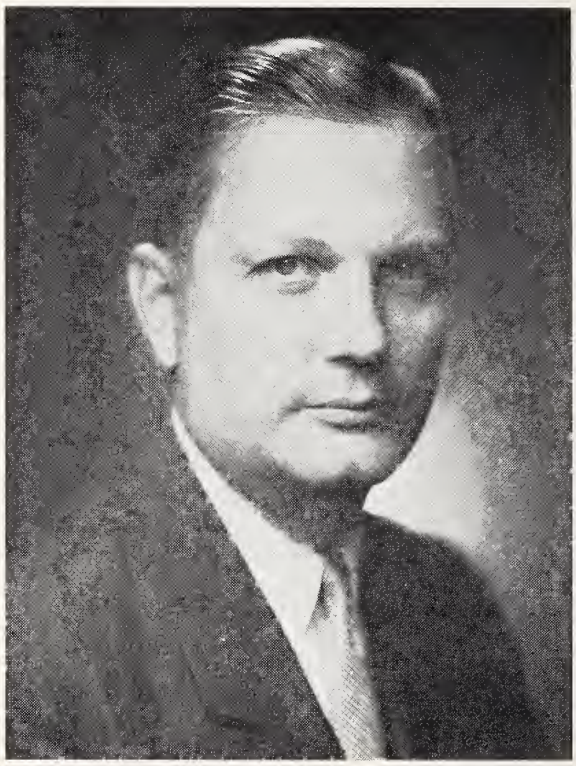
The Seventh Annual Meeting of the Southwest Obstetrical and Gynecological Society will be held in Las Vegas, Nevada, November 4 and 5, 1957, with headquarters in the Hotel Tropicana.

Guest speakers will be Dr. Edward C. Hughes, Professor of Obstetrics, State University of New York Medical Center at Syracuse; Dr. Milton L. McCall, Professor and Head of the Department of Obstetrics and Gynecology, Louisiana State University School of Medicine, New Orleans, La.; Dr. Edward G. Waters, Division Chief of Obstetrics Margaret Hague Maternity Hospital, Jersey City, N. J., and Assistant Clinical Professor Obstetrics and Gynecology, Columbia Medical School; Dr. Lawrence R. Wharton, Assistant Professor Gynecology, John Hopkins University, Baltimore, Md.; and Dr. Ralph A. Reis, Professor Obstetrics and Gynecology, Northwestern University, Chicago, Ill.

Officers of the Society are Dr. Jesse M. Rust, San Diego, President; Dr. Charles E. Van Epps, Phoenix, President-Elect; Dr. Robert P. O'Donnell, Las Vegas, Nev., Vice-President; Dr. Zeph B. Campbell, Phoenix, Secretary; and Dr. Raymond Jennett, Phoenix, Treasurer.



Dr. Hughes



Dr. McCall

The complete program is as follows:

Sunday, November 3, 1957

6:30 PM Meeting of the Council of the Society

Monday, November 4, 1957

8.00 AM Registration opens

8:30 AM Meeting of the nominating committee

9:30 AM Call to Order
Dr. Jesse A. Rust, President, San Diego

Announcements and Introduction of Guest Speakers
Dr. D. Dalton Deeds, San Diego

Dr. Reis

Scientific Program—Morning Session

Presiding—Dr. Charles Van Epps, Phoenix

9:45 AM "Cesarean section — Comparison of indications, problems and complications over fifteen year span"
Dr. Edward G. Waters

10:45 AM "Posterior Culdeplasty — a new surgical technique for treatment of enterocele"
Dr. Milton McCall

Annual Business Meeting

12:00 Noon Presiding — Dr. Jesse A. Rust

Luncheon and Round Table

12:30 PM Presiding — Dr. Ralph Reis
Assisted by — Dr. John Wanless and Dr. Thomas Rowley

Scientific Program — Afternoon Session

Presiding — Dr. Robert P. O'Donnell

2:00 PM "Relationship of the Endometrium to Ovalar Growth, Abortion and Congenital Malformations"
Dr. Edward C. Hughes

3:00 PM "The Operative Technique for the Prevention of Post-operative Vaginal Vault Prolapse"
Dr. Edward G. Waters

Commentaries all papers
— Dr. Ralph Reis

Evening

5:30 PM Cocktails
Dinner and show — Hotel Tropicana
Late shows as desired

Tuesday, November 5, 1957

Scientific Program — Morning Session

Presiding — Dr. Hollis Brainard

10:30 AM "The Problem of Urinary Tract Injuries in Gynecological Surgery"
Dr. Lawrence R. Wharton

11:30 AM "The Relation of Uterine Bleeding to Cerebral Palsy"
Dr. Edward C. Hughes

Luncheon and Round Table

12:30 PM Presiding — Dr. Ralph Reis
Assisted by — Dr. George Turner and Dr. Donovan Johnson

Scientific Program — Afternoon Session

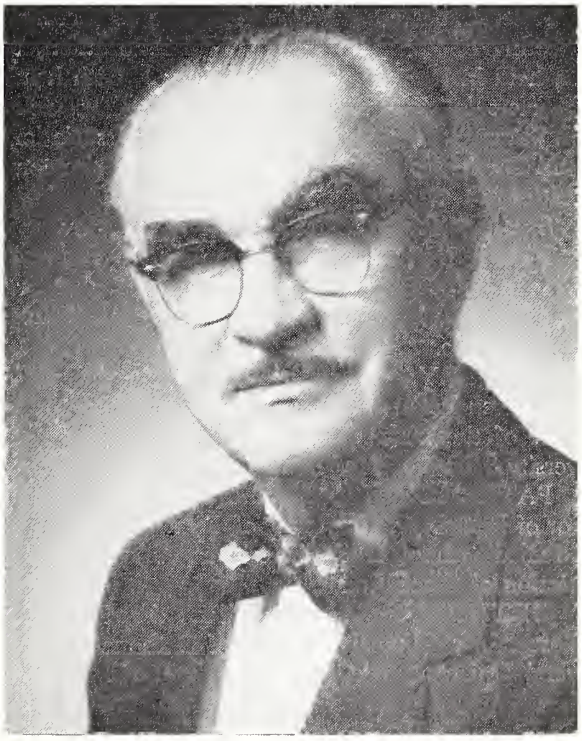
2:30 PM Presiding — Dr. Celso Stapp

2:30 PM "The Value of Vasodilator Therapy in the Modern Management of Toxemia of Pregnancy"
Dr. Milton L. McCall

Running commentaries all papers
— Dr. Ralph Reis

Evening

5:30 PM Cockatils
Master of Ceremonies
— Dr. William Buster McGee
Dinner show — as desired
Late show — as desired



Dr. Waters

Dr. Wharton

Convention Committee

D. Dalton Deeds, M.D.
George Derieux, M.D.
George Egenolf, M.D.
Charles Franklin, M.D.
William Buster McGee, M.D.
James Phalen, M.D.
James Ravenscroft, M.D.
Francis Rook, M.D.
Thomas Slate, M.D.
John Wanless, M.D.
George Turner, M.D.
Robert P. O'Donnell, M.D.

Nominating Committee for 1957-58 Officers

Preston Brown, M.D., Phoenix, Chairman
Hollis Brainard, M.D., Tucson
Rudolph Hack, M.D., San Bernardino
George Hart, M.D., Albuquerque
William Buster McGee, M.D., San Diego
Paul Wigg, M.D., Reno
Celso C. Stapp, M.D., El Paso

Reservations Heavy for Southwestern Medical Association Meeting Oct. 9-11

Reservations are pouring in for the 39th annual meeting of Southwestern Medical Association, to be held in El Paso Oct. 9, 10 and 11, with headquarters in the Hotel Paso del Norte. Dr. Celso C. Stapp of El Paso is president of the Association, and Dr. Merle D. Thomas, chairman of the committee for convention arrangements.

Speakers for the meeting are as follows:

MEDICINE: William Parson, M.D., Professor of Internal Medicine and Chairman of the Department of Medicine, University of Virginia School of Medicine.

SURGERY: Oscar Creech, Jr., M.D., The William Henderson Professor of Surgery and Chairman of the Department of Surgery, Tulane University School of Medicine.

PATHOLOGY: E. E. Muirhead, M.D., Professor of Pathology, University of Texas Southwestern Medical School, Dallas, President, American Association of Blood Banks.

ORTHOPAEDIC SURGERY: Frederick C. Bost, M.D., Clinical Professor of Orthopaedic Surgery, University of California School of Medicine, San Francisco, President, American Academy of Orthopaedic Surgens.

GENERAL PRACTICE: J. S. De Tar, M.D., Past President, American Academy of General Practice, Milan, Michigan.

ANESTHESIOLOGY: Robert A. Hingson, M.D., Professor of Anesthesia, Western Reserve University, Cleveland.

OTOLARYNGOLOGY: Howard P. House, M.D., Professor of the Department of Otolaryngology, University of Southern California School of Medicine, Los Angeles.

OPHTHALMOLOGY: Phillips Thygeson, M.D., Clinical Professor of Ophthalmology, University of California School of Medicine, San Francisco.

OBSTETRICS and GYNECOLOGY: Edward A. Banner, M.D., Assistant Professor of Obstetrics and Gynecology, Mayo Clinic, Rochester, Minnesota.

BANQUET SPEAKER, Friday night, Oct. 11: Mac F. Cahal, Executive Secretary and General Counsel of the American Academy of General Practice.

The Southwestern Medical Association has been authorized by the commission on education of the American Academy of General Practice to grant a maximum of 14 hours credit, Category I, to members of the academy.

ORIGINAL ARTICLES

Emotional Factors in Disorders of Menstruation and Infertility

By Joseph Rogers, M.D., *Physician, New England Center Hospital; Assistant Professor of Medicine, Tufts University School of Medicine, Boston*

This is the third of an outstanding series of seven articles covering the effects of emotional stress in the practice of medicine. The articles were prepared for a symposium delivered in January at the Tufts-New England Medical Center in Boston.

SOUTHWESTERN MEDICINE wishes to take this opportunity to express its great appreciation to the Bulletin of the Tufts-New England Medical Center and its editor, Dr. Robert P. McCombs, for making this important series available for publication.

SOUTHWESTERN MEDICINE is proud to have the opportunity to publish the articles comprising this symposium on emotional stress which is believed to be the most complete and thorough discussion of this subject.

Next month: "The Influence of Emotional Factors on Cardiac Disease," by Louis A. Selverstone, M.D., Physician, New England Center Hospital; Assistant Professor of Medicine, Tufts University School of Medicine, Boston.

The recognition of emotional factors in the genesis of menstrual abnormalities is not new and a large volume of literature is available on this subject. The onset of the menarche signals in dramatic fashion the transition to womanhood and is in itself an experience with deep emotional content. Menstruation and reproduction are complex processes involving delicate relationships between hypothalamus, pituitary and ovary. The available evidence suggests that this intricate balance is rather easily and frequently upset by what appear to be emotional causes. The purpose of this paper is to discuss a few of the more common gynecologic problems in which emotional factors are prominent.

Amenorrhea is a frequent gynecologic complaint and one of the common types of amenorrhea is called "hypothalamic" or psychogenic.[1] It is seen frequently in girls going away to school or college for the first time, in nurses entering training, in women separated from husbands or sweethearts as in time of war or in other situations associated with stress. Examination of such patients discloses no apparent abnormality. Vaginal smears show evidence of estrogen deficiency. Measurements of the urinary excretion of follicle stimulating hormone (FSH) are normal.

Levels Not High

The levels are not high as in amenorrhea due to ovarian failure or low as in patients with pituitary deficiency. The administration of progesterone to women with hypothalamic amenorrhea does not usually result in withdrawal bleeding, indicating the lack of an active estrogen, yet some factor is present that keeps the level of follicle stimulating hormone from rising. It is postulated on reasonable theoretical grounds that in this disorder there is a block in the release of luteinizing hormone (LH) from causes arising in the hypothalamus. Whether or not this explanation is correct, it remains a clinical fact that many women with amenorrhea do not have demonstrable ovarian, pituitary or uterine diesease to account for the process and may respond promptly and dramatically to simple psychotherapy.

In many, resumption of normal menstruation occurs with amazing promptness following a physical examination or the performance of a laboratory test. In others, the amenorrhea may last for months to years. We have recently had the opportunity to follow a young woman with "hypothalamic" amenorrhea of five years' duration. She was unresponsive to reassurance or to periodic attempts to establish menstruation by use of estrogen and progesterone. Not until she removed herself from the influence of a rigid, domineering mother did normal periods resume. It seems reasonable to regard this as cause and effect. Hypo-

thalamic or psychogenic amenorrhea seems an acceptable illustration of an emotional factor influencing the hypothalamus in such a way as to interfere with normal release of gonadotrophins.

Incidence of Obesity

It is known that there is a significantly increased incidence of obesity in women with amenorrhea and it is widely accepted that obesity is frequently a manifestation of an emotional disorder. In a certain percentage of obese women with amenorrhea weight reduction alone results in resumption of menstruation. Whether this is due to some effect of a negative caloric balance on pituitary-gonadal relations or due to a psychotherapeutic effect is not clear. It may well be an example of two emotionally mediated symptoms responding to the same psychotherapeutic stimulus.

In anorexia nervosa the accompanying amenorrhea may occur prior to any significant weight loss and it is thought that the initial cause of the amenorrhea is failure of secretion of LH,[3] presumably on the basis of interference with hypothalamic hypophyseal pathways. This effect is thought to be related to emotional causes. With subsequent weight loss, the amenorrhea is more likely to be due to failure of both LH and FSH secretion. It has been shown in underfed rats that the pituitary has a normal or increased content of gonadotrophins but that there is interference with their release from pituitary.[4]

Prolonged Action

Dysfunctional uterine bleeding, or metrophathia hemorrhagica, is excessive or prolonged acyclic uterine bleeding associated with failure of ovulation. Because of an interference with normal pituitary ovarian relationships, there occurs the prolonged action of decreased amounts of estrogen acting for a long time in the absence of progesterone. Although the evidence indicating emotional factors in the genesis of this disorder is less striking than that for hypothalamic amenorrhea and is more difficult to explain on known physiologic facts, there are numerous recorded instances in which dysfunctional uterine bleeding has ceased coincident with the resolution of emotional conflicts.

The psychodynamics have been discussed by Heiman.[5] It is clear that one has to consider psychogenic causes as a distinct possibility in the differential diagnosis of abnormal uterine bleeding.

Common Problem

Another common gynecologic problem is dsymenorrhea. Some degree of abdominal discomfort is the normal accompaniment of ovulatory menstruation. Some women, apparently anywhere from 3 to 15 per cent, experience sufficient distress to cause them to lose time from work or school and to interfere with their usual activities. In the great majority of instances, women with dysmenorrhea do not have local pelvic causes to account for their complaint, and the term primary dysmenorrhea is applied to this group.

Associated with abdominal cramps there may be headache, backache, irritability and gastrointestinal disorders. Theories as to the mechanism of the pain in dysmenorrhea have included disorderly uterine contraction, imbalance of estrogen and progesterone, uterine hypoplasia and pelvic congestion. These theories do not withstand critical analysis, and it can generally be shown that primary dysmenorrhea is associated with psychogenic causes.[6] Several studies have indicated that women with dysmenorrhea have lower pain thresholds than women who do not complain of discomfort.

There is frequently a history of emotional maladjustment in childhood, and as adults they may harbor resentment of their feminine role. In some there will have been poor prepubertal preparation for the onset of the menarche. Many have been led to believe that pain with menstruation is abnormal . The terms "the curse," "the sickness," "being unwell," do much damage in perpetuating the notion that menstruation is not a healthy event.

In the majority of instances of primary dysmenorrhea, simple explanation and reassurance will be effective. Some will require simple non-narcotic analgesics. The large number of preparations reported as aiding dysmenorrhea in about 75 per cent of the cases attest to the fact that the action of most drugs in this disorder is largely based on their psychotherapeutic effect. So prominent is the psychogenic factor that clinical studies reporting the efficacy of a new therapeutic agent in the management of dysmenorrhea have to be scrutinized with extreme caution.

Tension Syndrome

Closely allied to dysmenorrhea is the syndrome of premenstrual tension, a term applied to a varied group of symptoms occurring several days prior to menstruation. The complaints usually include abdominal discomfort, bloating, backache, headaches, increased nervousness, tension, depression and irritability. Many women experience one or more of these symptoms premenstrually but are not sufficiently disturbed by them to seek medical aid. In normal women in the premenstrual phase there is retention of water, sodium, and chloride that may be reflected in weight gain or recogniz-

able edema.[7] It has been suggested that the symptoms of premenstrual tension are related to retention of water and electrolytes and that relief of the symptoms can be accomplished by diuretic measures.[8] It is most difficult to demonstrate at what point a normal physiologic process should be dignified as a pathologic entity and, in many instances, the symptoms of premenstrual tension are more acceptably explained by demonstrable psychologic factors.

In normal women premenstrual alteration of mood is common. It seems likely that women with complaints of premenstrual tension are over-reacting to normal physiologic changes. Women with premenstrual tension usually have other past or present symptoms indicative of a psychoneurosis. Dehydration measures relieve some of the symptoms but frequently do not alter insomnia, tension, depression and irritability.[9] These symptoms and perhaps even those attributed to water retention seem psychiatrically mediated and respond to reassurance, and mood-elevating or tranquilizing agents.

In the field of infertility, there is an increasing body of opinion and a fair amount of evidence that psychologic factors play an important etiologic role in some infertile couples.[10] It is well recognized that a significant number of women presenting themselves for infertility studies will conceive rather promptly after an initial interview or examination and prior to any therapeutic measures. It is a rather common experience for a couple to establish conception only after cessation of investigative procedures, presumably in relation to release of tension.

With considerable frequency on examination of the couple complaining of infertility, no physiological or mechanical cause is demonstrated. In some patients emotional problems may be readily recognized but in others they are not apparent. Coincident with resolution of emotional problems, reassurance, release of fears and tension, and recognition that their situation is not unique, conceptions occur that at the present cannot be explained on any basis other than a psychologic one.

Attention has also been recently called to "one child sterility," the situation in which a couple successfully has one child but for no apparent medical reason are incapable of fostering a second pregnancy.[11] Rather complex psychiatric factors are said to be prominent in the etiology of this condition.

Habitual Abortion

There is also evidence to suggest that psychologic factors play an important role in the problem of habitual abortion. Recently, Mann[12] reported a small series of patients who were habitual aborters, managed with psychiatric techniques. 93.3 per cent of all pregnancies before treatment ended in abortion. With treatment, 16.6 per cent ended in abortion.

In the rather rare but fascinating syndrome of pseudocyesis there may be breast enlargement, secretion of milky fluid from the nipple, softening of the cervix and uterine enlargement, signs that may easily lead to the erroneous diagnosis of pregnancy. The psychogenic factors involved in pseudocyesis are usually an intense desire for or a great fear of pregnancy. In this disorder Fried and his co-workers[13] have shown evidence of persistence of corpus luteum function as indicated by the finding of secretory endometrium. It is suggested that in pseudocyesis, psychic factors affect the pituitary, presumably by way of the hypothalamus, causing release of luteotrophic hormone, suppression of follicle stimulating hormone and persistence of luteal function with resultant production of estrogen and progesterone. The management is psychiatric rather than hormonal.

Normal Psychologic Event

The menopause is a normal physiologic event occuring anywhere from the age of 40 to 55 years with an average age at onset of about 47 years. The physiological events occurring consist of decreasing frequency of ovulation and decreasing production of estrogen and elevation of gonadotrophins. This hormonal change is reflected in amenorrhea and hot flashes. Prior to cessation of menstruation, there may be irregularities or excessive bleeding. The mechanism of the hot flash is not clear but may be related to elevation of pituitary gonadotrophins or perhaps to the effect of varying levels of estrogen on arterioles of venules. Although it is generally accepted that the hot flash is hormonally mediated, it has been shown that the frequency and severity of hot flashes can be favorably influenced by reassurance, placebos or sedation.

The majority of the symptoms attributed to the menopause such as irritability, nervousness, depression, headaches, dizziness, paresthesias, insomnia and fatigue, are clearly manifestation of concomitant emotional disorders and related only temporally to the menopause.[14] Such symptoms are not due to estrogen deprivation nor are they alleviated by estrogen administration except perhaps by its psychotherapeutic effect.

It is at about mid-life when a woman finds her relation to her family undergoing revision. Her children are either adolescent or full grown and developing interests outside the home. She may for this reason feel unwanted. She may have misconceptions concerning obesity, malignancy, loss of

libido or be concerned about her attractiveness to her husband. In a sense, a major portion of her responsibilities, namely, that of child care, is drawing to an end. This is in contrast to her husband whose activities in his business or profession may be at their peak at this time of life. Many women find themselves poorly prepared for the emotional conflicts which arise and the resulting symptoms of anxiety and depression seem logically explained on this basis.

Well-Meaning Friends

Many women have erroneous concepts of the menopause obtained from well-meaning friends or relatives. Much of the advertising appearing in both lay and medical publications suggests that the major problem is the selection of the proper hormone to administer, yet numerous articles have repeatedly called attention to the importance of the emotional factors. It is tragic if either patient or physician regard all symptoms at this time of life as being due to the menopause and, therefore, not worthy of investigation. Thorough examination is, of course, necessary and once it is clear that the symptoms are related to the menopause, the majority of patients respond gratefully to an explanation of the phenomenon and reassurance. Some will require estrogens for the relief of hot flashes but a large number can be handled by simple psychotherapeutic measures. The anxieties and depressions of mid-life are frequently helped by mood-elevating or tranquilizing agents.

The importance of emotional factors is immediately apparent to anyone interesting himself in reproductive disorders. Increasing attention is being directed to the concept of altered endocrine patterns associated with emotional causes.[15] In at least two of the entities discussed, namely, hypothalamic amenorrhea and pseudocyesis, there is acceptable evidence of hormonal change mediated, apparently, by psychic factors. So common are emotional factors in the field of human reproductive physiology that many clinical observations are difficult or impossible to evaluate. Many previous mechanistic concepts of gynecologic disorders have to be reviewed in light of the increasing recognition of the importance of psychic factors.

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Organon Introduces New Systemic Hemostat For Prevention and Control of Bleeding

Organon Inc., of Orange, N. J., has just introduced Adrestat, the first complete systemic hemostat for the prevention and control of bleeding.

Physicians are continually confronted with the problem of controlling bleeding, whether surgically induced or not. Adrestat is the first systemic hemostat utilizing adrenochrome, the bioflavonoids, and vitamin K for the prevention and control of bleeding. This complete systemic hemostat provides the surgeon with a dependable, effective means of preventing capillary blood loss—thus, improving operative conditions by maintenance of a clear field and lessening the possibility of post-operative bleeding and other sequelae. Adrenochrome semicarbazone (2.5 mg., present as 65 mg. carbazochrome salicylate) has proved to be invaluable in promoting retraction of severed capillary ends and increasing capillary resistance to trauma.

Hesperidin (50 mg.) and vitamin C (100 mg.) act synergistically to strengthen capillaries and to correct or prevent abnormal capillary fragility and permeability. Vitamin K (5 mg. sodium menadiol diphosphate) has been included in the Adrestat formula as an aid in the restoration and maintenance of normal prothrombin levels. Adrestat (F), the injectable form, contains in each 1-cc ampul 5 mg. adrenochrome semicarbazone (available as 130 mg. carbazochrome salicylate).

Adrestat Indicated

Adrestat is indicated in virtually every bleeding condition and operative procedure, including epistaxis, nasopharyngeal surgery, dental surgery, uterine bleeding, and hypoprothrombinemia. Adrestate capsules and lozenges should be taken three times a day for five days preceding and five days following surgery. Prior to surgery 1-cc of Adrestat (F) is given and may be continued every two hours until bleeding is controlled. There are no contraindications to the use of Adrestat nor are there any cumulative effects.

Adrestat capsules are packaged for prescriptions in boxes of 30; lozenges are available in boxes of 20. Adrestat (F) is packaged in boxes of five 1-cc ampuls.

Evaluation of an Oral Hormone-Vitamin Preparation in Geriatric Patients

By Milton Ende, m.d., *Petersburg, Virginia*

The problem of accommodating our ever-increasing geriatric population is becoming more complex every year. While considerable attention is given to the care of these senior citizens by continuously improving nutritional and medicinal preparations, the socio-economic side of the problem is being neglected.

The numerical increase of geriatric patients is reflected statistically in the literature. It has been shown that[1] in 1950 the population of the United States totaled 150.5 million. Persons under twenty numbered 51.5 million and persons sixty and over, 18 million. According to the 1956 estimate of the Bureau of Census, the population has increased to 167 million and the percentage of persons sixty and over has increased even more rapidly during the period.

The socio-economic aspects of gerontology—the scientific study of the aging process and its diseases — include employment, retirement, recreational activities, housing and education. Although population growth has fixed a steadily rising upper limit upon the number of people available for work, employment practices and socio-economic policies have increasingly reduced this potential labor force as average age has risen. In the executive strata, for example, older individuals are usually found as proprietors or in managerial positions. While the former group is able to keep its income on a relatively high level in spite of advancing age, the latter group is faced with compulsory retirement. Before this last resort is evoked, a review board should explore every possibility of assigning to these elderly executives more sedentary jobs, such as the training of talented younger employees and having them serve as advisors to top management in important business decisions.

Compulsory Retirement

However, if top management should fail to see the value of such older employees, compulsory retirement is evident. As a result of such management decisions, the elderly executive strata is bound to decline and, not being sufficiently replaced by younger men, a shortage of potential executives may ensue. From a physician's standpoint, early retirement may cause mental depression, accentuated by a lack of funds, resulting in multiple emotional disturbances. These, in turn, may trigger somatic diseases, such as gastrointesinal disturbances[2] cardiac disease[3] and other undesirable organic conditions.

Recognizing these facts and applying the principles of preventive medicine, the physician's role should be to see that the increasing bulk of older persons is being kept in physical and mental fitness. Stieglitz[4] comments that, "the periodic health inventory is the keystone of the arch of geriatric medicine". He mainains that a health inventory is superior to a routine clinical examination, as it entails a painstaking history, a functional text of reserve capacities and laboratory studies, all of which are requisite to proper thoroughness. Thus, physicians may help elderly patients to keep their jobs long after their retirement age, enabling them to contribute to the national output by using their badly needed experience in indusry.

In summary, it should be pointed out that by employing more optimistic attitudes in industry, a number of problems could be solved in the field of gerontology; (1) the individual's physical and mental health could be preserved through advanced medical care and by recognition and status in his job, and (2) the individual's financial worries could be eased. Industry itself would benefit from better management, owing to more intensive training programs, and could look forward to continuous replenishment of retired executives.

Purpose of Study

The purpose of this study was to clinically evaluate the effect of an oral hormone-vitamin preparation* containing low amounts of methyltestosterone and ethinyl estradiol when administered to 94 geriatric patients ranging in age from 48 to 86 over a period ranging from two to three months. The preparation was given in both capsule and liquid form. All of these patients suffered from organic diseases such as arteriosclerosis, diabetes mellitus, gastrointestinal disorders, rheumatoid arthritis and various other conditions.

The hormone-vitamin preparation was added to their regimen. Of the 94 patients, five objected to taking the capsules and were given the liquid dosage form. The capsules contain hormones, vitamins, minerals, pancreatic substance, liver stomach substance, iron and amino acids, while the liquid dosage form consists of hormones, vitamins, l-thyroxine, iron, d-amphetamine, liver fraction I and ethyl alcohol. The patients were given

*Neobon, J. B. Roerig and Company (Div. Chas. Pfizer & Co., Inc.)

one to two capsules daily or one to two teaspoons of the liquid over a period of two to three months.

Results

All patients were evaluated according to weight gain, improved sense of well-being and improvement of appetite. Examining Table I, it can be seen that patients of all disease groups responded well to the adjunctive hormone-vitamin treatment. No side reactions of any kind were observed which could be attributed to this preparation. The response in the cardiovascular group seems to be more significant statistically, as the number of patients (66) lent itself to a better evaluation. The miscellaneous groups included patients with prostatic hypertrophy, pneumonia, brain tumor, gastric resection for peptic ulcer, colitis, carcinoma of the lung and uremia.

TABLE I

CLINICAL RESPONSE IN 94 GERIATRICS WITH VARIOUS ORGANIC DISEASES

DOSAGE: 1-2 Capsules Daily or 1-2 Teaspoons Daily

Diagnosis	No. of Patients	Weight Gain	Improved Sense of Well Being	Improved Appetite
Cardiovascular	66	39(59.09%)	54(81.82%)	40(60.61%)
Diabetes	10	7(70.00%)	9(90.00%)	8(80.00%)
Anxiety	2	1(50.00%)	1(50.00%)	1(50.00%)
Rheumatoid Arthritis	4	2(50.00%)	2(50.00%)	2(50.00%)
Miscellaneous	12	7(58.33%)	8(67.67%)	6(50.00%)
TOTALS	94	56(59.5 %)	74(78.7 %)	57(60.6 %)

In evaluating the results of this study percentage-wise, our calculations show that 75 (79.78 per cent) of the 94 patients were benefited by adjunctive hormone-vitamin therapy. Nineteen patients did not respond to treatment. Broken down, the statistics show the following total improvement of all disease groups: weight gain in 56 (59.5 per cent) patients; improved sense of well-being in 74 (78.7 per cent) patients; improved appetite in 57 (60.6 per cent) patients.

Discussion

Previous studies with small dosages of androgens and estrogens, with or without vitamins, were reported by Birnberg and Kurzrok,[5] and by Klemme.[6] The former authors stated that a low dosage methyltestosterone-ethinyl estradiol formula in tablet form given to 70 patients unexpectedly lowered the blood pressure in the majority of them —in some cases, even from hypertensive levels. Klemme used a hormone-vitamin preparation in 35 patients with senile debility and found, primarily, that the preparation induced a remarkable tonic effect on the patients.

Secondarily, he noted similar to Birnberg and Kurzrok, that hypertensive patients were controlled more easily when this preparation was administered adjunctively. Although no data on blood pressure were taken in this study, it may very well be that the sense of well-being was partly due to reduction of blood pressure, especially in the 70 to 80 age groups. Many of the 94 patients were very ill at the beginning of treatment and now lead a normal life and do a good day's work. Masters,[7] who recommends oral ingestion rather than intramuscular routines in low dosage sex hormone therapy, summarizes his monograph as follows:

"Senility is a major distress in our society today. Rescue from this crippling disease is possible or a delay in its onset is probable if adequate sex steroid replacement is initiated and effectively maintained in any long-range program."

The author is inclined to agree with this statement, but believes that the supplementary substances such as vitamins, minerals and pancreatic substance, which decrease in old age, are equally important and have an additive effect in the treatment of geriatric patients. A similar opinion is held by Schneider and Sankowsky[8] who state in a recent article that, a vitamin deficiency has been determined in the cells and tissues of elderly people which cannot be overcome by ordinary nutrition.

Summary and Conclusion

The socio-economic shortcomings in the accommodation of our increasing geriatric population are pointed out and suggestions are made indicating preventive measures for keeping aged persons physically and mentally sound. The effects of two hormone-vitamin dosage forms—capsule and liquid —on 94 geriatric patients with various organic diseases are described.

It was concluded that a hormone-vitamin preparation containing low amounts of methyltestosterone and ethinyl estradiol given in addition to the ordinary regimen is a valuable adjunct in the therapy of elderly people. The results indicate that 75 (79.78 per cent) of the 94 patients treated benefitted from the preparation. No side effects were encountered in this study.

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121 S. Market St.

The Neurological Manifestations of Dissecting Aneurysm of The Aorta

By Murray Persky, M.D., El Paso

Introduction

In 11 — 46 per cent of cases of dissecting aneurysm of the aorta, neurological complications are the sole or accompanying findings. These symptoms and signs depend on whether the arterial circulation to the a) brain b) spinal cord or c) peripheral nerves is compromised. Briefly, the immediate blood supply to the central nervous system is as follows:

a) **Brain:** the **vertebral** and **internal carotid** arteries.

b) **Spinal Cord:** The anterior portion of the spinal cord is supplied by the **anterior spinal artery** formed by the paired branches of the **vertebral** and in addition **radicular arteries** from the **intercostals.** These intercostals also supply superficial dorsal branches to the cord. Below the midthoracic region, a large lumbar or thoracic vessel supplies the cord.

The following neurological symptoms and signs have been described as presenting or accompanying dissecting aneurysm of the aorta:

a) **Brain:** Coma, delerium, convulsions, hemiparesis, sudden loss of consciousness, aphasia, blindness, periods of confusion, and positive Babinski signs.

b) **Spinal Cord:** Paraplegia, numbness and tingling of the extremities, and weakness and reflex changes in the limbs.

Case History

The following is a case recently seen at Providence Memorial Hospital in El Paso, Texas:

A 46-year-old male was admitted on the evening of May 6, 1957 because of sudden onset of dizziness followed by a convulsion and incontinence of urine. Past pertinent history was that of hypertension since 1942 and a military rejection for that reason. Initial physical examination revealed the following pertinent findings:

1. He was semi-comatose but extremely restless with a violent thrashing about in bed which made him quite difficult to examine.
2. Blood pressure was 160/90.
3. The right radial pulse was not palpable but dorsalis pedis pulses were palpable.
4. The temperature was normal.
5. A maculopapular rash was noted over the left side of the chest and abdomen as if following the course of an intercostal nerve.

The patient continued delirious and unresponsive and expired three days later. The blood pressure varied from 146/80 to 220/100. One febrile episode was treated with antibiotics and the restlessness treated with reserpine 2.5 mg IM q6h. **Laboratory:** a leukocytosis with a shift to the left. The spinal fluid was normal. The urine revealed a 2 plus albumin with a few red blood cells in the sediment. The EKG showed left axis deviation and minor T wave changes.

The working diagnosis at the time of death was encephalitis, or possibly hypertensive encephalopathy.

Autopsy revealed a dissecting aneurysm of the aorta with the initial tear about four cm. above the right aortic cusp and extending down to the renal arteries. The heart was greatly enlarged and of the hypertensive type. Punctate hemorrhages were noted in the cerebral cortex. The aneurysm had rupturd into the pericardial sac as a terminal event.

Discussion

The case was undiagnosed before death in spite of several clues given to us. The past history of hypertension, the absence of the radial pulse and sudden onset of symptoms were clues. The severe pain which usually accompanys a dissecting aneurysm was masked by the delerium and cerebral anoxia. The EKG is usually not helpful in this diagnosis as was noted in this case.

The rash over the abdomen might be related to changes in one of the intercostal arteries; ecchymoses of the abdominal wall have been described in dissecting aneurysm and are probably related to rupture of the aorta into the abdominal cavity. We were unable to visualize the fundi but if pallid enough might have been another clue to the diagnosis.

The following is quoted from a recent JAMA article (1)

"Cerebral and neurological symptoms are often the only manifestation of dissecting aneurysm.

Shock, hemiplegia, coma, confusion, psychosis, and bizzare neurological findings may distract attention from more essential matters. If the blood pressure is high, the abnormalities are likely to be attributed to hypertensive encephalopathy, cerebrovascular accident, or subarachnoid bleeding. Peripheral neurological disturbances occur when dissection extends to involve the intercostal, lumbar, femoral or spinal arteries."

One Other Disease

There is also one other disease of the arterial system which perhaps might be confused with other neurological disease or dissecting aneurysm of the aorta. It is the syndrome of thrombosis of the carotid artery and its branches. It is most often episodic in nature with transient attacks of aphasia or hemiparesis.

The presence of monocular blindness and contralateral hemiplegia is almost diagnostic. Certain diagnosis is made by angiography or surgical exploration.

Routine palpation of the carotid arteries should be part of the physical examination and an awareness of the above syndrome will lead more often to its diagnosis.

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First National Bldg.

BORDER PUBLIC HEALTH ASSOCIATION ELECTS OFFICERS

Dr. Malcolm H. Merrill of Berkeley, Calif., director of the State of California Department of Public Health, was elected president of the United States - Mexico Border Public Health Association at its 15th annual convention in San Antonio, Texas, April 9-12.

Other officers of the organization are as follows: Eng. Alberto Ortiz Irigoyen of Mexico City, Director General de Construccion, Secretaria de Recursos Hidraulicos, president-elect; Dr. Belle Dale Poole, Los Angeles, Child Health Consultant for the State of California Department of Public Health, vice-president; Dr. Hector Torres Sangines, Mexicali, Baja California, Jefe Servicios Materno-Infantiles, vice-president; and Dr. Sidney B. Clark, El Paso, Chief El Paso Field Office of the Pan American Sanitary Bureau, secretary.

The next meeting will be held in Hermosillo, Sonora, April 8-11, 1958.

Varied Sessions

Each of six sections, maternal and child health, tuberculosis, nursing, sanitation, venereal disease and veterinary public health, held several sessions. The first mentioned agreed to prepare a directory of maternal and child health personnel on both sides of the border. Among other problems uppermost in the various sections and general discussions were chest x-rays of all migrant workers leaving the area, training of nurses, water pollution along the Rio Grande, malaria eradication in Mexico, fluoridation, eradication of Aedes aegypti, extension of venereal disease diagnosis and treatment to all, bat rabies, brucellosis in cattle and goats, training of public health personnel, integrating specialized health activities with the general public health program and public health planning in event of disaster.

Resolutions were passed for continuing support and strengthening of programs for eradicating mosquito-borne diseases by the governments of both Mexico and the United States; for a system of intercountry reporting of tuberculosis similar to that now in effect for venereal disease; for further research on Brucella melitensis on both countries and a joint committee to plan a coordinated study of brucellosis in the border states; for expanding serologic testing of migrant workers; and for extension of regular meetings of staffs of adjoining border health departments in the solution of various public health problems.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

August 15, 1957

FREDERICK P. BORNSTEIN, M.D.—EDITOR

CASE NO. 830

Presentation of case by E. S. Crossett, M.D.

History — Dr. Nathan Kleban:

A 52-year-old woman developed a cough which became productive of half a cup of yellow sputum per day. When blood appeared mixed with the sputum five months after onset of the cough, the patient came to the hospital. There was no chest or other pain, and no weight loss.

Past and family history were not remarkable. There were four pregnancies, three living children. Menopause occurred four years before admission.

Physical Examination:

The patient was an obese woman in no acute distress. T. 100, P. 96, R. 22, B. P. 100/78. Blood was expectorated during the examination. Breathing was slightly labored. Breath sounds were absent and percussion note was dull to flat over the left middle and lower lung fields. Moist rales were present over the left upper lung fields. There was a thick abdominal wall. Enlarged organs, masses or tenderness were not found in examination of the abdomen. Breast, thyroid and pelvic examinations were normal.

Hospital Course:

Eight hundred and fifty cc. of yellow, bloody fluid were aspirated from the left pleural space on the second hospital day. Pathological report of cell block was metastatic adenocarcinoma. Bicillin was injected on the day of admission. One I-V dose of 10 mg. nitrogen mustard was given. Deep X-ray therapy to the left lung and pleura as a palliative measure was recommended by the Tumor Clinic. During the four weeks she was in the hospital the patient had a low grade fever but was in no discomfort and had a good appetite. Except for hemoptysis she had no complaint at the time she was discharged to receive Roentgen therapy as an out-patient.

Final Admission:

Two and a half months after her discharge from the hospital, and seven and a half months after the onset of her cough, the patient returned with the complaint of vomiting about half a cup of blood four times a day for three days.

T. 101.4 P. 92 R. 24 B. P. 90/64. Penicillin, Streptomycin and two units of blood were administered. She died less than 24 hours after admission.

Laboratory Findings:

X-ray: January 7, 1957, "Radiographic examination of the chest reveals the right lung to be well ventilated. The left lung field is obscured by an opacity extending up to the second rib anteriorly. There is a cavity with a large fluid level on the left. The mediastinum is not significantly displaced; there are advanced degenerative changes in the thoracic spine. There is a large, stable calcification in the lower lung field probably on the left.

Conclusions: Findings consistent with lung abscess on the left".

January 8, 1957: Re-examination of the chest, "Improvement as compared with previous study; decrease in effusion on the left."

January 14, 1957: Re-examination of the chest, "Increasing effusion on the left".

January 29, 1957: Laminograph of chest, "Laminographic study of the chest reveals approximately one and a half centimeter nodule in the left lower lobe posteriorly. There is a cavity in the superior segment of the left lower lobe. There is also compression and slight elevation of the left main bronchus which appears to be due to a mass and there is thickening of the pleura in the left costa-phrenic angle. There is also a small, approximately one centimeter, soft tissue nodule in the left upper lobe. The findings are consistent with either a primary bronchogenic carcinoma with pulmonary metastasis or metastatic carcinoma from elsewhere. Conclusions: Laminograph consistent with primary bronchogenic carcinoma and pulmonary metastasis and cavitation or metastatic carcinoma".

Urine: January 7, 1957, S.G. 1.015, acid, trace of albumin, sugar negative, many white blood cells, 1 + epith. cells.

January 16, S. G. 1.015, acid, microscopic negative except for amorphous urates, albumin and sugar negative

January 23, S.G. 1.016, acid, albumin and sugar negative, 5-10 wbc, 1+ bacteria

January 29, S.G. 1.015, acid, 16-18 wbc, sugar and albumin negative

Blood counts: Jan. 8, 1957, Hb. 10.0 gms. Ht. 37%, WBC 12,000, Segs. 76, Lymph. 19, Eosins. 4

Jan. 16, Hb. 11.7 gms., Ht. 36% WBC 10,400, Segs. 70, Lymphs 22, Monos. 1, Baso. 1, Eosins. 6

Jan. 22, Hb. 9.8 gms., Ht. 35%, WBC 11,400, Segs. 81, Lymphs. 18, Eosins. 1

Jan. 28 Hb. 11.8 gms., Ht. 40%, WBC 12,300, Lymphs, 23, Segs. 73, Stabs. 4

April 13, Hb. 9.3 gms., Ht. 34%, WBC, 13,000 Segs. 91, Lymphs. 4, Stabs. 3, Monos. 2

Sputum January 9 negative for acid-fast organisms; sputum culture negative.

Serology January 7 negative.

X-ray Discussion — Dr. Vincent M. Ravel:

Study of the left lung field presents some very interesting features. The preliminary study shows an opacity involving the left hemithorax which was interpreted as an effusion. The second study, which is quite important, shows an increase in the effusion and a definite fluid level at the apex of the left lower lobe.

Now with an abscess at the apex of the left lower lobe, we radiologists feel that the primary consideration must be tuberculosis until proved otherwise. Further examinations then revealed an increasing effusion, and the effusion showed neoplastic cells classified as adenocarcinoma.

We then proceeded with a laminographic study which showed a very definite compression of the left main stem bronchus with some slight elevation. This of course could again be due to a neoplastic disease but on one or two other views we see some flecks of calcium which in turn further strengthens the concept that there is an accompanying tuberculosis.

Soft Tissue Mass

The soft tissue mass involving the left main stem bronchus of course could be primary bronchogenic carcinoma with necrosis, with abscess formation. It is possible that you could have tuberculosis with an accompanying carcinoma, primary or metastatic.

We feel that the lesion which involves the apex of this lobe is consistent with tuberculosis. I don't know how you can refute the observation of carcinoma or neoplastic cells in the pleural effusion.

Whether or not it is primary in the lung or primary from elsewhere, of course we can't decide. However, with this definite narrowing of the main stem bronchus I would consider primarily a bronchogenic carcinoma, with an accompanying tuberculosis.

Clinical Discussion — Dr. E. S. Crossett:

We already know what the diagnosis is before we start. Therefore I will just go over the history and as I go along, try to give the internes an idea about carcinoma of the lungs in general, symptomatology, diagnosis, our diagnostic procedures, and treatment.

This is a 52-year-old woman who five months previously had developed a cough and had begun to produce a half a cup of purulent sputum, and a few days before her first admission to the hospital she had begun to cough up a little blood with her sputum.

When an interne or anyone is taking a history regarding a chest case, I think they should know what symptoms can be caused by the various conditions in the lungs, and if they will try to visualize the lung with the various locations of the lesions in it, they will be able to remember and utilize the symptoms a little more effectively.

Look At Pictures

Now in looking at these pictures here, here is a bronchus coming out into the left lung. Well, if you have a carcinoma starting in this larger bronchus, it may cause one type of symptomotology, while if you have a coin lesion like you see out here, in the periphery of the lung, also a carcinoma, the symptomatology is going to be entirely different.

There is no consistency as far as the symptoms are concerned. These peripheral lesions are usually completely asymptomatic until they have spread to some adjoining part of the body where they can cause symptoms.

If the lesion is in some of the larger bronchi, it is first likely to cause a cough, because a carcinoma growing in a bronchus irritates it.

Principal Symptom

That cough is one of the principal symptoms of

carcinoma of the lung. Then, as the tumor grows, it begins to narrow the bronchus.

As it narrows the bronchus, patients may develop a wheeze. This wheeze will disappear when this bronchus is completely occluded, so the history of a wheeze is important, especially if it was present for a few weeks and then disappeared.

Also, during this time a carcinoma is likely to ulcerate. If it ulcerates, it is likely to bleed, especially when the patient coughs. Now the bleeding that you usually get with carcinoma of the lung is different from infection or bronchiectasis or tuberculosis or some other types of lesions, or at least it may be different.

Superficial Ulceration

The bleeding will not be severe. It will be a superficial ulceration that bleeds, so that there will be bloody streaking of the sputum.

In bronchiectasis, where you have puddling of secretions in a bronchus, you are more likely to have gobs of blood; or with mitral stenosis you are more likely to have gobs of blood; with a pulmonary embolus you are more likely to have gobs of blood. You may have gobs of blood with carcinoma of the lung, but streaking is more characteristic.

Then as this tumor in the bronchus (and we will talk mainly about bronchogenic carcinoma) continues to grow, it will finally completely occlude the bronchus, and when the bronchus is completely occluded, the lung distal to that area collapses and develops atelectasis.

With the atelectasis, almost always, infection occurs. Where there is poor drainage in any part of the body, there is likely to be infection, so that you get an infection with cough, fever, leucocytosis and so on.

Common History

The most common history that a chest surgeon gets is that there is a man, smoker, who is over 45 or 50, who developed the flu, and a little hacking cough, and went to see his doctor. His doctor heard some rales and maybe did or maybe did not, order an X-ray.

Anyway, he gave him a shot of penicillin, or maybe a couple of shots, which relieved his fever and his acute symptoms, so he went on about his business, but he did not completely get over all of his symptoms.

He continued to cough, and he continued to feel a little washed out, and gradually began to lose weight.

Ordinarily we see more carcinomas in the spring than any other time of the year.

The reason for this is that these old fellows wait until warm weather sets in, and when their chest condition doesn't clear up, then they begin to think well, maybe there is something wrong, so they go see their doctor and they get an X-ray, and here we find what is usually an inoperable carcinoma.

Ask About Sputum

One other thing that you should do in taking a history on a chest patient is ask them about their sputum. It is important in the differential diagnosis of various lesions; ask them about the quantity and the quality, and the presence or absence of blood. I think we have pretty well covered the symptomatology of carcinoma of the lung; you can see why they have these symptoms.

Chest pain has been reported to be one of the most common symptoms. Chest pain is one of the most common symptoms that anybody has, so it is pretty hard to evaluate. It usually occurs as a result of pleurisy, or after the lung collapses and gets infected, or as a result of metastases to the chest wall or some adjacent part of the lung which has pain fibers in it. The lung itself has no pain fibers.

Expected Changes

Now in this case, physical examination revealed the changes that you would expect with a lesion like that in the lung—dullness to percussion, and absence of breath sounds and so on. There was no evidence of any distant metastases mentioned here; the abdomen had no masses in it; there were no nodes palpated.

This patient had a pleural effusion when she came in. 850 cc. of serosanguinous fluid was removed, so that I think the next thing to take up is pleural effusions, what may cause them and what to consider in differential diagnosis.

There is quite a number of conditions that can cause pleural effusions; carcinoma of the lung; tuberculosis; fungus infection; pulmonary emboli; and occasionally tularemia and similar diseases. Pleurisy from a bacterial infection can cause pleural effusion which is sometimes thin at its onset; trauma or ruptured anersysm may cause a pleural effusion.

In this case the pleural fluid was bloody. Carcinoma of the lung probably is responsible for bloody pleural effusions more often than any other type of lesion. Pulmonary emboli often cause a bloody pleural effusion.

Tuberculosis

Tuberculosis can cause a bloody pleural effusion but it is rare, or at least it is unusual. Trauma quite often causes bloody fluid. Conditions such as a ruptured blood vessel, or aneurysm, may occasionally give you bloody fluid.

In this case the fluid was aspirated, the pathologist studied it and this is the course that should have been taken.

Now we have here the diagnosis I think in that the pathologist found groups or clumps of malignant cells in the pleural fluid which were adenocarcinoma. The next question that comes up is whether or not this is primary in the lung or from some other part of the body.

As far as I am concerned it is of academic interest only, because once a carcinoma has involved the pleura, it is incurable.

No Treatment

There is no surgical treatment for it and there is no treatment that we have now that is going to clear it up. As far as going to a lot of elaborate tests and procedures to try to find out whether it is primary or secondary, I think is not practical and probably useless.

If you obviously can feel a mass in the colon or in an ovary or in the abdomen somewhere, well then you can assume that it is a secondary carcinoma.

In this case there was no evidence, at least on the protocol here, of any distant lesions, so I think we can consider it a carcinoma of the lung.

Adenocarcinomas of the lung in women are not uncommon, so that this could be a primary adenocarcinoma, but as I said, it is of academic interest only.

Treatment of Lesion

The next thing is the treatment of a lesion like this. With any carcinoma of the lung, there is only one way that they can be cured, and that is to find them early, before they have metastasized to any distant organs and to remove them surgically.

In a large chest practice, where they see quite a large number of screened lesions, about 1 out of every 3 carcinomas will now live for a period of 4 to 5 years. In a practice which is not screened, such as mine, I think the results are going to be considerably worse.

There was no indication at all for surgery in this woman. She was treated first with nitrogen mustard, and subsequently with X-ray therapy. Now my own personal experience has been limited with both these agents.

I personally feel that nitrogen mustard instilled in the pleural cavity, should be tried before X-ray therapy, for several reasons: it is much more economical; it is just as likely to help the patient; and neither nitrogen mustard nor X-ray are going to do a great deal for the average patient.

One Old Woman

I have had one old woman who came in to see me with a lesion like this, who had a pleural fluid just loaded with adenocarcinoma. She was in shock and in poor shape.

I tapped her and put about 20 mg. as I recall of nitrogen mustard in the pleural space. Her shock deepened and she was quite ill for two or three days, but she improved, and I was surprised to find out how much relief she obtained.

Her fluids diminished markedly, her appetite returned and she remained well for about nine months, without any symptoms. As a matter of fact she was around home and fairly comfortable and happy.

Symptoms recurred after nine months and I put some more nitrogen mustard into her pleural space which did very little good and she died in about 3 more months.

X-ray therapy: Just to spray the side of the chest like this with X-ray therapy would not do a great deal of good. Where the tumor has spread to some organ such as a bone, or the brachial plexus and is causing a great deal of pain, I would think that it would be very useful in relieving their pain, and should be reserved for a situation of that sort.

One other agent that you could use would be radio-active isotopes, particularly radio-active gold, and it is quite effective in diminishing or clearing up a pleural effusion from a malignant lesion.

There again, I think it should be used after the nitrogen mustard, because it is more economical to use nitrogen mustard, and it may be just as effective.

Diagnostic Procedures

I think about the only thing I have left to go over is some of the diagnostic procedures that can be used with a chest lesion or in diagnosing a lesion of the lung or of the chest. X-ray, besides the history and physical, is the most common thing that we use.

The plain chest X-ray, P-A and lateral of the chest, is the first view that is usually obtained and is quite useful in demonstrating that a lesion is present.

As far as I am concerned, the X-ray is rarely diagnostic of any condition.

The radiologist or chest surgeon who sees a lot of X-rays can make a guess if he sees a shadow on the lung or he can guess that this is a tumor or he can guess it is tuberculosis, but he cannot say with certainty in all cases that it is.

All he sees is a shadow up there and the diagnosis will have to be made on clinical grounds. Now there are two other X-ray procedures which are useful: the laminograph and the bronchogram.

Laminograph

The laminograph, as you all know, is an instrument which cuts through the different planes of the body and will outline lesions more clearly than the plain chest, and it is quite useful in many ways.

It will show up a lesion very clearly and if you have a solitary lesion in the lung it will demonstrate the presence of calcium; it will demonstrate the presence of a cavity, which may be useful in your differential diagnosis.

If you have a metastatic lesion to the lung, it is useful in showing multiple metastatic lesions.

We had one child in Dallas that had a hypernephroma, with one lesion in his lung. We took laminograms on him and were able to demonstrate 15 lesions in his lungs with the laminograms. With any metastatic lesion, if you are interested in removing it, you should have laminograms before you do it.

Bronchogram

The bronchogram is occasionally useful. It is often useful in your differential diagnosis with carcinoma. It is occasionally useful. If you have a patient with hemoptysis and not much on his X-ray, and nothing on bronchoscopy, you can do bronchograms and maybe demonstrate the presence of a bronchiectasis or a cavity or a cyst. This will be very useful in ruling out a carcinoma or showing why the patient had hemoptysis or some other symptom.

Occasionally with carcinoma a bronchogram will be very useful. When I was in Dallas Dr. Shaw had a man come in who had had hemoptysis on one occasion. He bronchoscoped him, his X-ray was negative, he was about to send him home, when he went by and listened to his chest and heard a wheeze in his left upper lobe.

So he took him back and did a bronchogram n him and demonstrated a little filling defect in his left upper lobe bronchus, with the bronchogram. It was a very beautiful demonstration of a small lesion. He operated and found a little carcinoma about the size of a dime, so the bronchogram can occasionally be quite useful to you. It is good to show where your obstruction is, at times.

Never Diagnostic

The X-rays are never diagnostic. The sputum studies are often useful, particularly if you do enough of them over a period of time. It has been said if you will obtain five separate sputum specimens and have them examined for tumor cells that they will be 80 percent accurate in demonstrating the presence or absence of tumor; so they are useful if they are positive, they are not much good to you if they are negative.

If the sputum is negative and you can't make the diagnosis from the X-ray or the bronchograms or the laminograms, and you usually can't, bronchoscopy is used.

Now you all know what a bronchoscopy is. You look down their trachea and you can look at their major bronchi.

It will demonstrate a carcinoma of the lung in about 40 percent of the cases for 40 percent of your carcinomas will be where you can see them with the bronchoscope and take a bite.

It may be helpful in that you can get down there and get secretions from various parts of the lung and the secretions can be studied for bacteria and tumor cells.

Scalene Node Biopsy

A scalene node biopsy may often be helpful. It consists of going in above the clavicle, dissecting down to the scalene muscles. Overlying the scalene muscles just above the clavicle is a fat pad which contains many little lymph nodes which on both sides drain the pleural cavities.

In almost all carcinomas of the lung, before they are operated on, a scalene node biopsy should be done. It is useful in that it may give you the diagnosis of metastasis to these nodes.

Secondly, if the nodes are involved, then the case is inoperable. There is no point in opening his chest and operating on him because you are not going to do a great deal for him. He is already a hopeless case if you have metastasis to that distance.

You cannot get it all out, so that scalene node biopsy should be done in most instances, particu-

larly in the far advanced carcinomas, because it will often prevent an unnecessary operation in a patient with far advanced carcinoma.

Against Chest Wall

Occasionally there will be a tumor which lies against the chest wall. I have never used it myself, but it has been recommended, to do a needle biopsy of this sort of tumor. I think it would be perfectly all right if you have a tumor up against the chest wall to stick a needle into it and try to aspirate some tumor cells to be examined.

There are certain disadvantages: you might needle an abscess, if you do you could very possibly give the patient an empyema; theoretically you could strew carcinoma cells through the needle tract and plant them in the chest wall so that if it were an operable tumor you might decrease his chances by doing that, and for those reasons I have not used it.

Now in the event that you have a lesion in the chest and you have gone through all of these procedures, and still don't have a diagnosis, and the patient is in the cancer age group and if for any reason you might suspect that you have a carcinoma, then you should use an exploratory thoracotomy: just going into the chest, looking at the lesion, biopsying it if necessary and seeing what it is. There again I have not used exploratory thoracotomy very often. I think we should use it more; with modern anesthesia it is no longer a problem.

Summary

In closing: if there is some additional disease here, there is no indication of it in the X-rays or in the protocol. There is some indication that there is a mass in the region of the pulmonary artery so that it is conceivable that some of the fluid in the pleura could be from a leak in an aneurysm. However, I think his primary difficulty is carcinoma of the lung.

Clinical Diagnosis: Bronchogenic Carcinoma

Dr. Crossett's Diagnosis: Bronchogenic Carcinoma

Pathological Diagnosis: Adenocarcinoma of the gall bladder with metastases to right and left lung.

Pathological Discussion — Dr. F. P. Bornstein

On autopsy we found a fairly well nourished middle aged woman measuring 160 cm. in length and weighing approximately 65 kg. Over the left anterior area of the chest was a typical radiation atrophy measuring 15 x 12 cm. The important findings were found in the chest.

The left lung was removed with great difficulty due to thick, grayish-white fibrous masses which existed between the visceral and parietal pleurae. On further sectioning it was seen that the main bronchus ended in a grayish-white scarred mass.

There was an oval shaped area of lung tissue measuring about 6 cm. in greatest diameter, very firm, grayish-white, with some areas of necrosis.

Cavitation and fluid were absent. The remainder of the lung parenchyma was fibrosed. In the right lung there were a few tiny nodules.

Preliminary Diagnosis

From these gross findings I made a preliminary diagnosis of primary carcinoma of the left lung with metastasis to the right lung. In addition, we found a metastasis to the upper pole of the right kidney.

The other additional finding of significance was an enlarged and distended gall bladder which was filled with innumerable facetted stones. After the stones were removed the mucosa of the gall bladder appeared markedly granular and thickened.

On miscroscopic examination it became obvious that the lung lesions were highly atypical, consisting of anaplastic glandular structures, again suggesting metastatic carcinoma as was originally suggested from the examination of the pleural fluid.

Further Sectioning

Further microscopic sectioning revealed an adenocarcinoma of the gall bladder which was unquestionably primary in nature. Inasmuch as the tumor in the lung showed the same histological pattern as was found in the gall bladder, I think I am justified in making a diagnosis of primary adenocarcinoma of the gall bladder with pulmonary metastases.

It is interesting to note that this gall bladder carcinoma manifested itself clinically first by its pulmonary complications. A review of the literature has revealed one case so reported.

From previous discussions of carcinoma of the gall bladder which were held at these conferences, we are all aware of the fact that: (1) the prognosis of carcinoma of the gall bladder is extremely bad; (2) carcinomas of the gall bladder frequently remain small and are first known by their metastases; (3) all our carcinomas of the gall bladder have been associated with stones, just as the one reported here.

Program On Normal And Abnormal Aspects Of The Skin To Be Featured At A.A.A.S. Meeting

The Committee on Cosmetics of the American Medical Association in co-sponsorship with the Society for Investigative Dermatology will present a two day symposium entitled "The Human Integument—Normal and Abnormal". This program has been arranged at the invitation of the American Association for the Advancement of Science and will be presented before the Medical Sciences Section at the Association's 124th annual meeting in Indianapolis, Dec. 28 and 29.

The symposium will be divided into four major sessions: I. The Integument as an Organ of Protection; II. Circulation and Vascular Reactions; III. Sebaceous Gland Secretion; and IV. Pathogenetic Factors in Pre-malignant Conditions and Malignancies of the Skin.

Further information on the symposium may be obtained by writing to Mrs. Veronica L. Conley, Secretary, Committee on Cosmetics, American Medical Association, 535 N. Dearborn, Chicago 10, Ill.

Coming Meetings

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, in El Paso.

Southwestern Dermatological Society and Texas Dermatological Society, El Paso Medical Center, 1501 Arizona St., El Paso, Oct. 12, 1957.

Academy of Psychosomatic Medicine, annual meeting, October 17-19, 1957, Morrison Hotel, Chicago.

Southwest Obstetrical & Gynecological Society, Annual Meeting, November 4 and 5, Las Vegas, Nevada.

American College of Surgeons Sectional Meeting, Statler-Hilton Hotel, Dallas, Texas, January 9-11, 1958.

Texas Surgical Society, El Paso, April 7 & 8, 1958.

Fifth International Congress of Internal Medicine, Sheraton Hotel, Philadelphia, April 24-26, 1958.

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Southwestern MEDICINE

VOL. XXXVIII NOVEMBER, 1957 No. 11

EDITORIAL

Ligation of The Internal Mammary Arteries

Dame Fashion dictates the raiment of the individual. There was a time when the requisite of fashion may well have exceeded the concepts of reason. Today the surgical approach to the treatment of cardiac lesions has become quite the fashion. For this reason, the editorial board of SOUTHWESTERN MEDICINE is availing itself of the opportunity of presenting the editorial, "Ligation of the Internal Mammary Arteries", published in the New England Journal of Medicine Volume 257, August 22, 1957, Number 8, Page 385. The Editorial board wishes at this time to express their sincere appreciation to the Editor of the New England Journal for allowing the use of this editorial.

The history of surgical attempts to bring a new blood supply to the heart muscles of patients with coronary-artery insufficiency has a close parallel with earlier attempts directed at the femoral artery. The ligation of veins, the creation of arteriovenous fistulas, the surgical creation of myxedema and the division of sympathetic nerves supplying the arteries have been used in both conditions. Patients presenting themselves for relief of coronary insufficiency are so numerous, and the implications of failure of relief in many of them so great, however, that the types of operation that have been performed on the heart are even more varied than those on the lower extremity. The implantation of tissues bearing vasculature, the plunging of a pulsating and bleeding artery into myocardial tissue, the creation of pericardial adhesions and attempts to augment, by irritating epicardial substances, intercoronary anastomoses have placed the myocardium in a class by itself as an object of surgical assault.

Objective Evaluation

Objective evaluation of the results of these operations has been difficult. Initially, each of them is followed by partial or complete relief in more than half the cases. "Functional" tests are often improved also. Such tests, however, are known to be affected by factors other than the arterial blood supply to the myocardium.

It is safe to say that examination of experimental and clinical evidence and of thoughtful medical opinion indicates that the relief afforded by these operations may not be the result of increased myocardial blood supply. It may rather be the relief experienced by an apprehensive and disabled person who has had his confidence restored by surviving such an operation and who has recognized in his new status as a "post-operative" patient an honorable reason for limitation of activities.

The most implausible operation of all now demands evaluation. The hope that ligation of the internal mammary arteries will, by stimulating collateral circulation via intercostal and pericardial branches, cause increased myocardial blood supply is based on a hypothesis having no physiologic background in hemodynamics. But the announcement is made that the operation, like its predecessors, has relieved many patients of angina pectoris.

Mortality Close To Zero

The procedure admittedly promises to have one conspicuous advantage — namely, a mortality that should be close to zero. For this reason, patients will be more readily referred to surgeons than in the past. The word "surgeons" is used advisedly, rather than "thoracic surgeons" or "cardiac surgeons." But why, after all, "surgeons" of any kind? Cannot any practitioner of medicine, with the aid of procaine and a few instruments, undertake it? And then how about prophylactic ligation? And what might happen to Blue Shield in its attempts to pay for the amount of work involved?

In light of these considerations, what should be the current attitude toward internal-mammary-artery ligation? In the forefront of choices should be the decision for this operation to be done only by those, if any exist, who believe they have at hand proper objective measures for the determination of coronary blood flow with which to evaluate the results of their work.

Edited by Andrew M. Babey, M.D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Truths and Concepts Concerning The Cardiovascular System

(Continued)

37. "It is a mistake to diagnose pericardial effusion in rheumatic heart disease except on the very strongest evidence available."—Carey Coombs, *Rheumatic Heart Disease,* Wm. Wood & Company, Baltimore, 1924, page 252.

38. The *character* of the heart sounds whether first or second, is on occasions of great help in the diagnosis of cardiac conditions, but the idea that one can gauge the functional efficiency of a heart by the *loudness* of sounds is altogether fallacious." —J. Linnell and W. A. R. Thompson, *Brit. Med. Jour.,* 2: 442, 1938.

39. "Contrary to current teaching, a systolic murmur at the mitral area is the commonest murmur in mitral stenosis, not a presystolic."—J. Linnell and W. A. R. Thompson, *loc. cit.*

40. "Nocturnal dyspnea may be due to pulmonary infarction."—Paul White, *loc. cit.,* page 491.

41. "In many cases of angina pectoris both the physical and the electrocardiographic examination are entirely negative."—Frank Wilson, *Association of Life Insurance Medical Directors of America,* 24: 96, 1937.

Bad Reputation

42. "The very bad reputation which low-voltage complexes have acquired rests upon studies carried out in hospitals where a large percentage of low-voltage complexes are [of abnormal shape as well as size]. Electrocardiograms in which the ventricular deflections are small but normal in every other respect are not necessarily of serious import." —Frank Wilson, *loc. cit.*

43. "No statistical study is available which gives an adequate idea of the frequency of P-R intervals of 0.21 and 0.22 second in the electrocardiogram of persons who appear to be in good health, but I believe that they are not extremely uncommon, and I doubt that they have any serious prognostic significance."—Frank Wilson, *loc. cit.*

44. "On the whole, a prolonged QRS interval is a considerably more reliable sign of cardiac disease than a prolonged P-R interval."—Frank Wilson, *loc. cit.*

Significance Doubtful

45. "It is doubtful whether electrocardiograms which appear to be normal apart from the small size of the QRS deflections have an important significance unless the reduction of voltage is extreme."—Frank Wilson, *loc. cit.*

46. "It is my impression that conspicious right axis deviation after the age of 40 is almost always abnormal."—Frank Wilson, *loc. cit.*

47. "Pericardial friction sounds often change from hour to hour, and may disappear and reappear in the course of a day."—Richard Cabot (source uncertain).

48. "Systolic and presystolic murmurs at the apex of a very large heart may have little significance."—Richard Cabot (source uncertain).

49. "When the pericardial friction sound is single, auscultation may fail to distinguish it from a valvular murmur, and especially so when the single friction sound is heard most distinctly over the situation of the valves."—Thomas Addison's Works, *New Sydenham Soc.,* London, 1868, 36: 65.

50. "So far as auscultation is concerned, the double friction sound of pericarditis if heard toward the base of the heart might be mistaken for the see-saw murmur of imperfect aortic valves or vice versa. The character of the pulse alone would be almost sufficient to decide the question."—Thomas Addison's Works, *loc. cit.*

51. "In certain diseases of the heart, especially when the organ is enlarged it is difficult or impossible, accurately to localize the murmurs, however distinct or obvious these murmurs may be."—Thomas Addison's Works, *loc. cit.*

"POINTERS"

From the Case Records of the Massachusetts General Hospital, 1955*

(continued)

23. "Diverticula with or without evidence of diverticulitis occasionally bleed profusely. I recall seeing a patient who had repeated episodes of massive gastrointestinal bleeding for which no cause could be found. At the time of exploration a small diverticulum of the ascending colon, which contained a fecalith, a large eroded blood vessel and a blood clot, was found. That patient has had no bleeding since the diverticulum was removed six years ago." loc. cit.; p. 152

24. "Massive bleeding from the gastrointestinal tract of obscure origin had better be treated conservatively unless there is a definite indication for operation such as a demonstrable source for the bleeding or to save the patient's life. We have all seen these patients subjected to an exploratory laparotomy in which every inch of the bowel and the entire abdominal contents are examined thoroughly and yet nothing is found." loc. cit.; p. 153

25. "Perhaps we do not think of Meckel's diverticulum often enough; two per cent of autopsies show a Meckel diverticulum. I had not been aware of this extraordinary frequency of Meckel's diverticulum in the whole population." loc. cit.; p. 153

26. "Friedlander's pneumonia, of course, is a rare form of pneumonia; it occurs primarily in older people, particularly those debilitated by age or by chronic alcoholism. Its onset is somewhat different from that of ordinary pneumococcal pneumonia. It frequently begins, as this man's illness began, with a chronic bronchitis producing signs and symptoms of pneumonia." loc. cit.; p. 253

Salt Wasters

27. "Patients with pulmonary disease, usually pulmonary tuberculosis, are termed "pulmonary salt wasters." Frequently such patients are suspected of having Addison's disease, but tests of their adrenal functions are normal." loc. cit.; p. 293

28. "Patients with miliary tuberculosis may have no clinical signs of meningeal involvement, and yet analysis of the spinal fluid may reveal an increased number of cells, with no other findings. If this cerebrospinal fluid is allowed to stand, a pellicle may form, and this can be stained and examined for acid-fast bacilli." loc. cit.; p. 293

29. "Patients who receive chlorpromazine should have tests for bile in the urine while they are being treated." loc. cit.; p. 381

30. "Jaundice due to chlorpromazine may be of abrupt onset usually after two or three weeks of therapy; laboratory tests show no hepatic cell damage, only evidence of biliary obstruction. Jaundice may last many months." A composite; loc. cit.; p. 382

Massive Hemorrhage

31. "We have occasionally seen massive hemorrhage, particularly along the lesser curvature, from ulcerations caused by long-standing intubation of a patient." loc. cit.; p. 385

32. "Even though the liver edge was palpable, from the film I cannot be sure of any hepatic enlargement. I think we are much more reliable in the evaluation of the size of the spleen than we are of the size of the liver." loc. cit.; p. 428

33. "A physician years ago said that there are only two kinds of pus in the chest—'thank God pus' and 'my God pus'." loc. cit.; p. 472

34. "That he had a gastrectomy is of particular interest in view of the increasing numbers of postgastrectomy patients in whom pulmonary tuberculosis develops." loc. cit.; p. 570

35. "I believe that a semiannual chest file should be obtained for an indefinite period in the postgastrectomy patient, just as in the follow-up study of the diabetic patient, who is known to be more susceptible to tuberculsois." loc. cit.; p. 570

36. "Upward gaze is the most difficult movement for the eyes to make. Downward gaze is the easiest." loc. cit.; p. 612

37. "At times, however, it is possible for cor pulmonale to exist with very little visible increase in the size of the right ventricle." loc. cit.; p. 655

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955.
Andrew M. Babey, M. D.

MEETINGS

ATTEND THE
ANNUAL MEETING
of the
SOUTHWEST
OBSTETRICAL
and
GYNECOLOGICAL
SOCIETY
in
Las Vegas, Nevada,
November 4 and 5

Surgeons To Hold Dallas Meeting

A three-day Sectional Meeting of the American College of Surgeons will be held in Dallas, Texas, January 9 through 11, 1958, in the Statler Hilton Hotel.

Topics to be covered range from Chemopallidectomy for Parkinson's Disease to Bomb Phenomenology, as well as panels, symposia and motion pictures dealing with highly practical day-to-day problems confronting busy practicing surgeons. A one-day program in ophthalmology will be held the second day.

Dr. Frank H. Kidd, Jr., Dallas, Assistant Clinical Professor of Surgery, Southwestern Medical School of the University of Texas, is Chairman of the Local Advisory Committee on Arrangements.

Cancer Seminar Scheduled In Tucson Jan. 23-25

Specialists from five states have accepted invitations to participate in the sixth annual cancer seminar of the American Cancer Society in Arizona, to be held in Tucson Jan. 23-25.

Chairman of the seminar committee is Dr. Darwin W. Neubauer of Tucson. Committee members are Dr. Arthur Present, Dr. Hermann S. Rhu, Jr. Dr. Ralph Fuller and Dr. James Fritz, all of Tucson and Dr. Edward Bregman and Dr. James Barger of Phoenix.

The three-day meeting, to be held at the Tucson Inn, will include lectures by leading authorities in the various fields relating to cancer. Approximately 500 persons are expected to attend. The seminar is open to all physicians and surgeons, internes, nurses and dentists. Last year's seminar, held in Phoenix, was attended by 400.

Panel of Specialists.

The panel of specialists includes Dr. Axel N. Arneson, onconological gynecologist of St. Louis, Mo.; Dr. James Barrett Brown, plastic surgeon also of St. Louis; Dr. Vincent P. Collins, College of Medicine at Baylor University, Houston, Texas; Dr. Ross Golden, diagnostic radiologist of the Medical Center, University of California at Los Angeles; Dr. Cornelius F. Lehmann, dermatologist of San Antonio, Texas; Dr. Ian G. MacDonald, onconological surgeon of Los Angeles, Cal.; Dr. Arthur Purdy Stout, Pathologist of Columbia University, College of Physicians and Surgeons, New York City; and E. Dale Trout, Ph.D., physicist for the General Electric Co., in Milwaukee, Wisconsin.

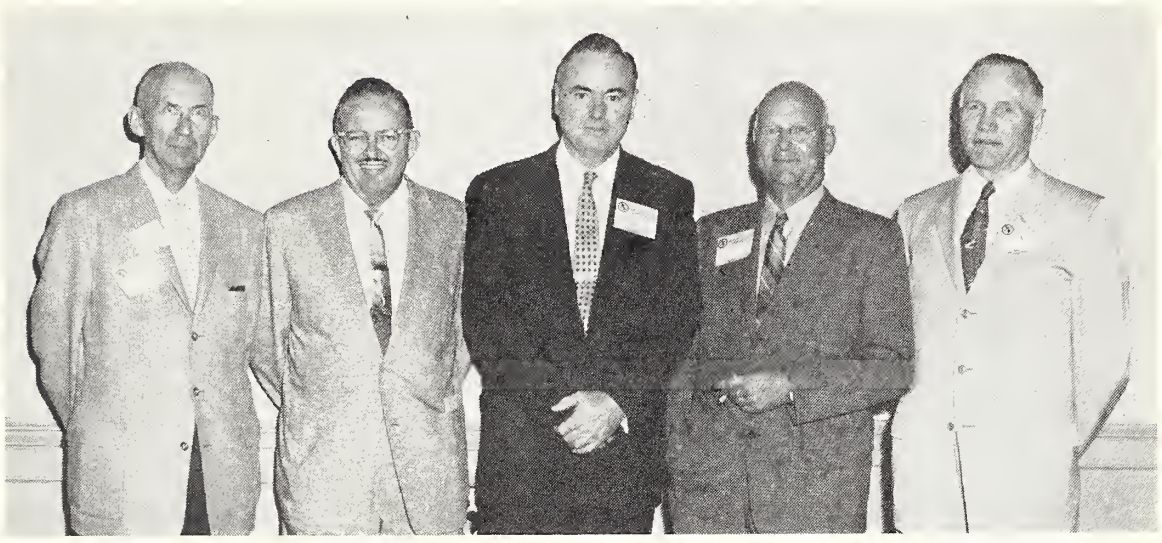
Opening the seminar program will be a session on skin tumors, scheduled for the morning of Jan. 23. Participating will be Doctors Brown, Collins and Lehman.

That afternoon Doctors Brown, Collins, Golden, MacDonald and Stout will take part in a panel on cancer of the head and neck.

"The Abdominal Mass" will be the subject of a session on the morning of the second day, with Doctors Golden, MacDonald, Stout and Collins participating. That afternoon the subject will be pelvic tumors with Doctors Arneson, Collins and Stout the speakers.

There will be two subjects for the final morning session. Opening the meeting will be a talk by Dr. Trout on "The Application, Limitation and Dangers of Radiation Therapy." The seminar will conclude with a panel on "End Results and Complications," with Doctors Arneson, Brown, Collins, MacDonald and Stout participating.

AMERICAN FRACTURE ASSOCIATION MEETING HELD IN EL PASO, SEPT 30-OCT. 2



FRACTURE MEETING—Attending the annual meeting of the American Fracture Association in El Paso, Texas, September 30 through October 2, were, left to right, Dr. H. W. Wellmerling, Bloomington, Indiana, secretary-general; Dr. Duncan C. McKeever, Houston, president; Dr. W. Compere Basom, El Paso, program chairman; Dr. Homer H. Stryker, Kalamazoo, Mich.; and Dr. Roger Anderson, Seattle, Wash. Drs. McKeever, Basom and Anderson were among speakers at the meeting, which was coordinated with the El Paso Division meeting of the Texas Postgraduate School of Medicine directed by Dr. Ralph H. Homan of El Paso. Both meetings were excellently attended.

IN EL PASO—Among officials and speakers attending the American Fracture Association meeting in El Paso were, left to right, Dr. Garrett Pipkin of Kansas City, Missouri, Dr. Louis W. Breck, El Paso, and Dr. I. William Nachlas, Baltimore, Maryland, speakers; and Dr. Manuel Carrasco, right, president of the Chihuahua City Medical Society in Mexico. Following the Fracture meeting, a group enplaned for a postgraduate session in the Medical University at Guadalajara, Mexico.

United States and Mexico Medical Society To Meet in Tucson Dec. 5-7

The Medical Society of the United States and Mexico will hold its annual meeting Dec. 5-7 at the Santa Rita Hotel in Tucson. Registration will begin Dec. 4.

Officers of the society are: Dr. H. E. Thompson, Tucson, president; Dr. H. G. Guevera, Mazatlan, Sinaloa, president-elect; Dr. W. R. Manning, Tucson, vice-president; Dr. J. E. Fonseca, Tucson, secretary for the United States; Dr. A. L. Guevara, Guadalajara, Jalisco, secretary for Mexico; Dr. R. E. Hastings, Tucson, treasurer for the United States; Dr. R. M. Alvarez, Mazatlan, treasurer for Mexico.

Members of the coordinating committee are Dr. H. E. Thompson, Dr. H. G. Guevara, Dr. J. Chavez, and Dr. W. R. Manning.

THE PROGRAM

Thursday, Dec. 5, 9-11 a.m. meetings of the committees on education, Governors', editing, contagious diseases; 11-12:30 a.m. executive committee meeting; 12:30-2 p.m. luncheon for members and wives with style show; 2-5 p.m. general assembly.

Friday, Dec. 6, 9-12 a.m. scientific assembly; 12-2 p.m. luncheon; 2-5 p.m. scientific assembly; 6:30-8 p.m. social hour; 8 p.m.-1 a.m. dinner dance.

Saturday, Dec. 7, 10-12 a.m. executive committee meeting, tour of Davis Monthan Air Force Base, tour of the University of Arizona, recreation, golf; 6 p.m. social hour, auxiliary dinner and show.

General Practice Review Scheduled in Denver

A full week's general practice review will be held Jan. 13-18 at the University of Colorado Medical Center, 4200 East Ninth Avenue, Denver 20. Postgraduate credit will be given.

Each of the six days will be devoted to a special subject, medicine, pediatrics, surgery, laboratory medicine and radiology, obstetrics and gynecology, trauma.

The course has been designed especially for the general practitioner. Physicians may register for all subjects or any selected one.

For detailed program and further information write the Office of Postgraduate Medical Education, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver 20.

Radiological Safety Course Offered By New York University

A two-week, full-time course in "Radiological Safety" will be given from January 6 to 17, by the Institute of Industrial Medicine of New York University Post-Graduate Medical School, in cooperation with the NYU College of Engineering and the United States Atomic Energy Commission.

The course is designed for industrial physicians, industrial hygiene engineers, public health officials, and individuals in industrial and university research laboratories who are responsible for radiological safety.

Particular attention will be given to radiation problems in Industry associated with the use of radioisotopes and radiation sources including industrial X-ray and power reactors. Covered will be such topics as nuclear physics, the biological effects of radiation, the principles of radiation protection and governmental codes and regulations.

Tuition for the course is $90.

For further information write to the Associate Dean, NYU Post-Graduate Medical School, 550 First Avenue, New York 16, N.Y.

Coming Meetings

Southwest Obstetrical & Gynecological Society, Annual Meeting, November 4 and 5, Las Vegas, Nevada.

United States and Mexico Medical Society, Annual Meeting, Santa Rica Hotel, Tucson, Arizona, Dec. 5-7, 1957.

Radiological Safety Course, New York University Post-Graduate Medical School, 550 First Ave., New York 16, Jan. 6-17, 1958.

American College of Surgeons Sectional Meeting, Statler-Hilton Hotel, Dallas, Texas, January 9-11, 1958.

General Practice Review, University of Colorado Medical Center, 4200 E. 9th Ave., Denver, January 13-18, 1958.

American Cancer Society, 6th Annual Seminar, Tucson Inn, Tucson, Arizona, January 23-25, 1958.

Texas State Surgical Society, El Paso, Texas, April 5-8, 1958.

Fifth International Congress of Internal Medicine, Sheraton Hotel, Philadelphia, April 24-26, 1958.

CURRENT THERAPY

Epilepsy and Its Management

By R. J. Bennett, M. D., *El Paso**

This is a review of the more recent literature on the subject of epilepsy. The paper follows more or less the organized writings of Penfield, Jasper, Gastault, Lennox and other well known authorities on the subject..

Epilepsy has always been a challenge to the diagnostic accumen of the medical man, for it can demonstrate itself explosively in a form easily recognized, then again it can present such bizarre symptoms that many cases go undiagnosed, the patient either being treated for a neurosis, mental deficiency, character disorder, psychosis or for many and varied physical complaints.

Metabolic Disease

Epilepsy has been described by William G. Lennox as a metabolic disease. Some individuals are born with a low convulsive threshold. They have an inherited susceptibility to various noxae, which in them help trigger epileptic attacks. These noxae may be of hormonal, traumatic, toxic, infectious, allergic, emotional or sensory origin.

Susceptibility to attacks is found in cases of symptomatic as well as idiopathic epilepsy.

This conclusion is drawn from the study of patients who have suffered severe concussions, skull fractures and evidently brain contusions who show comparatively slight residual symptoms without convulsions; yet other patients with mild concussions will develop definite epileptic symptoms. Three chemical substances are thought to be involved in the neurophysiologic disorder, namely glutamic acid, acetylcholine and potassium.

Gradual Change

In recent years there has been a gradual change in the classification of epilepsys from grand mal, petit mal, psychomotor and focal epilepsy. They have been divided into two general groups.

The cryptogenic (or idiopathic), general epilepsy for which no cause has yet been found; and the symptomatic epilepsy for which some lesion or factor is known as a cause (brain tumor, cicatrix, atrophy, circulatory disturbances, etc.). In both groups the attacks are further classified as focal, local and partial epilepsies.

To treat epilepsy most successfully one must recognize the type of attack the patient is having. As mentioned above there are many types of epileptic attacks.

A review of these is pertinent at this time. Grand mal and petit mal of generalized epilepsy have been classified as centrencephalic seizures by Jasper and Penfield. The pattern of the generalized epilepsy is well known and needs no detailed description except for some variations of petit mal attacks which may go unrecognized.

Activities Automatic

There are some petit mal attacks in which the patient may not lose total contact but his activities are automatic. The repetitious acts of children (head nodding, stumbling, inattention etc.) may be petit mal attacks. In others there may be apparent confusion such as failure to recognize familiar objects, places or use of implements.

In relation to petit mal, children suffering from this type of attack are distractible and thought to be mentally retarded, because of their lack of attention and failing work. Others may show restlessness and irritability.

They need more than the usual amount of supervision and correction because of their erratic behavior. Frequently these children are diagnosed and treated as "behavior" problems, the basic cause not being suspected.

Frequent Breaks

The rapid and frequent breaks in the continuity of their consciousness causes marked disturbance in their behavior. The handling of such children by severe disciplinary measures, as if in punishment for willful acts, will aggravate the condition. The attacks are usually of brief duration and may have very frequent recurrence.

These may be automatism. Attacks of similar type but of more prolonged duration are classified as partial epileptic seizures. The partial seizures are those most frequently undiagnosed, for in many the motor or sensory system may not be involved, but only those of associative and autonomic functions.

*Dr. Bennett this month is substituting for Dr. Jack A. Bernard, regular conductor of this section.

The somato-sensory seizures of the partial epilepsies may cause such symptoms as numbness in various areas, paraesthesias, loss of sense of position of a limb, etc. In this group are the visual seizures which may be manifested by scotomas, total blindness, various shaped size and colored moving lights. The olfactory seizures, also called uncinate fits, are those in which various odors are experienced.

Gustatory Fits Rare

Gustatory fits are rare. In the auditory seizures a great variety of sounds may be experienced. There are also virtiginous attacks, usually described by the patient as "dizziness." In all of these types of epileptic seizures, unless the individual suffers from more than one variety, the march of symptoms usually follows the same pattern.

The Jacksonian type of seizure is classified as a focal motor seizure. Other motor seizures are the grand mal, the versive seizures in which the body may end up in a complete rotation. The tonic seizures may be of extensor or flexor type causing opisthotonos or emprosthotonos.

Psychical Seizures: In these are experienced hallucinations and/or illusions. The latter may affect only one special organ. The patient may visualize distortion of objects; they may seem close and gigantic or distant and microscopic.

Hearing may be distorted in a similar manner, sounds being loud and near or faint and distant. There are dream state seizures in which the patient has the illusion of being completely detached from his environment and may express his feelings as those of being a "spectator" watching the stream of life passing by.

There are illusions of recognition or memory also known as de'ja vu de'ja entendu phenomena, in which the person feels he is experiencing an event which had taken place before, as if in a former life. There is an opposite illusion in which the person fails to recognize familiar surroundings.

Hallucinations of psychical seizures differ from illusions in that they occur without external stimuli. A patient described a scene of his childhood in which he was going out to bring the cows from pasture for milking. The setting was always the same with one sister sitting on a fence and the other going to the hen house.

Automatism: These attacks are also known as psychomotor and temporal epilepsy. As the name implies the individual acts automatically. During some of these attacks the patient outwardly may appear to act normally but he is lacking in understanding and as in many other types of epileptic attacks has usually no recall of his actions.

In most cases automatism is easily recognized for the actions are abnormally repetitious, such as smacking the lips, chewing movements, swallowing, growling, clearing throat, handling of objects and self. All of this is done in a purposeless manner.

Dangerous Epileptics.

Some individuals in this state are receptive to directions and handling, but others are dangerous if handled and will fight with the fury of a wild animal.

The person involved in a struggle with this type of epileptic may well be fighting for his life as the latter has no inhibitions and apparently feels no stress.

Some attacks are limited to the speech area (aphasic seizure). The patient not understanding and not being able to think of words or he may be able to think and understand but cannot speak.

Autonomic seizures: The attacks may be sensory or motor or both and involve any part or parts of the autonomic nervous system. Most frequently the G.I. tract is affected.

Symptoms may be vague feelings of discomfort, sometimes described as rising from the abdomen to the throat; nausea, spasms, vomitting, borborigmus, erucatations, etc. Circulatory symptoms give rise to pre-cordial pains and tachycardia.

Respiratory seizures may cause respiratory arrest or polypnoea, the subject feeling he is suffocating. Sweating, pallor, flushing, pupillary changes and pilmotor erection are also experienced in autonomic seizures.

There are some types of seizures which Penfield has placed under the heading of unclassified attacks.

These are status epilepticus, described as frequently recurring attacks with variation in time between attacks, but usually the seizures occur in almost continuous manner and may be followed by confusion, post epileptic psychosis, paralysis or death.

Pyknolepy: Is described as a petit mal-like seizure but holds a better prognosis. It begins between the ages of 4-12. The attacks are frequent, of short duration, follow the same pattern and stop spontaneously and do not recurr.

Akinetic Seizures: In attacks of this type the patient falls suddenly and remains motionless. Usually there is loss of consciousness. Gastaut and Pelligrin are of the opinion that myoclonus may be the cause for the patient's fall rather than the loss of muscle tone.

Epilepsia Partialis continua: In the motor variant local convulsive movements occur which continue over long periods of time, except for short interruptions. There is seldom much spread of the seizure. There are also continuing sensory and psychical auras..

Sensory Precipitation: (Reflex epilepsy). Apparently stimulation can set off epileptic discharges. These may be precipitated by sudden sound (startled precipitation) photic stimulations, certain types of sounds and other sensory stimuli (intercourse, etc.).

Sensory Arrest: While certain stimuli can precipitate an attack, counter stimulation can sometimes abort a seizure. Similarly there are psychic precipitation and psychic arrest. These are brought about by certain types of thinking and concentration. Patients who are aware of an impending seizure by a certain change in thought contents can sometimes avert the seizure by forcing their thoughts into other channels.

Cases have been reported in which transient paralysis may take place in an extremity in which focal motor seizure usually occurs. The so-called epileptic equivalents are now thought to be attacks of epileptic automatism and therefore true epileptic seizures.

There are many unsuspected epileptics whose only complaints may be one or a combination of some of the following symptoms: cyclical vomiting, recurrent headaches, recurrent abdominal pain, "fainting spells," recurrent nightmares, sleep walking, attacks of pyrexia, sweating and enuresis.

Psychosis in epilepsy: This may occur following a seizure or a series of seizures. It is particularly so of fugues, furors and clouded states. However, the condition may come on without necessarily following this pattern.

The psychotic episodes may be the epileptic attack. Such was the case in a patient who was frequently jailed because of his assaultive behavior. This was caused by the onset of auditory hallucinations in which he heard people insulting him.

He would attack the persons whom he thought were tormenting him. Then again the psychosis may take the form of a Schizoid reaction frequently paranoid in type, or it may mimic other types of psychosis.

Epileptic personality: The question whether such exists has long been a point of controversy. There are certain characteristics of personality associated with epileptoids, namely egocentricity; a domineering attitude and general sadistic tendency.

Because of this the individual is at a constant odds with his environment and hard to manage. He is opinionated; boastful; responds poorly to suggestions and authority; does not seem to learn by experience and is irritable. Not infrequently he has a paranoid or psychopathic make up.

Diagnosis: The importance of a thorough history has been mentioned. A neurological examination should be done; an electroencephalogram should be obtained. The latter procedure helps confirm one's diagnosis when positive findings are obtained and is valuable in localizing a focus and in revealing the type or types of seizures the patient is suffering.

It is helpful in determining the choice of drugs or other procedures one needs to follow. One must not forget however that the EEG is only a diagnostic tool and that only 85 per cent of Epileptics will give a positive tracing between attacks.

Clinical Examination

One must still depend on a thorough clinical examination rather than rely solely on diagnostic gadgets. There are various methods of stimulating epileptic tendencies in those who give normal tracings; intermittent photic stimulation is one. Others are opening and closing the eyes; overbreathing; metrazol stimulation alone or combined with photic stimulation and activation by sleep. Routine skull x-rays should be done; and, where indicated angiography, pneumoencephalography, ventriculography and laboratory tests such as glucose tolerance; blood calcium and thyroid function, etc. should be performed.

Treatment

The treatment will depend on the type of seizures and the ability of the patient to cooperate. Most cases will be treated medically and from the office. Those having automatism of violent nature, psychotic reactions as ictal reactions and psychosis need to be confined to a closed ward; and, if these reactions are repeated frequently or fail to clear within a reasonable time under adequate treatment, the patient should be committed to a state hospital.

The Medical Treament: Besides chemical treatment supportive therapy such as dietary, recreational, occupational and psychotherapy can be very helpful and must not be overlooked. As men-

tioned before the epileptic usually has unhealthy personality traits and his handicap creates problems which he must be helped to face.

Medications: In recent years a large number of new and useful drugs have been made available. Prior to that bromides, phenobarbital and the ketogenic diet were the few tools we had. The anti-convulsive drugs most effective in grand mal are: phenobarbital, also called luminal, mebaral, and gemonil in the barbituric acid derivatives; dilantin sodium and mesantoin in the hydantoin derivatives; and mysoline in the primidone and paradione in the dione derivatives.

In petit mal tridone and paradione, milontin and celontin have been found most useful. In the psychomotor attacks, phenurone has been the most effective, but the drug is highly toxic. Patients using it must be examined frequently for untoward effects as it has been responsible for cases of fatal toxic hepatitis. Recently celontin has been made available and is said to have a low toxicity.

Assesory Drugs: Glutamic racemic acid: This has been found beneficial in various types of epilepsy. Some patients with P.M. have been relieved of symptoms by this alone. Amphetamines act favorably in certain forms of epilepsy when combined with anti-convulsant barbiturate derivatives.

Diamox: (Acetazolamide) a carbonic anhydrase inhibitor, which causes a metabolic acidosis similiar to that obtained through the unpalatable ketogenic diet and also causes dehydration through its diuretic action, is a valuable adjunct and at times may be effective by itself (dosage 20mgm./-kg). The addition of promazine or chlorpromazine to anti-convulsive drugs causes further reduction of attacks in some patients and improves their emotional state.

Fitted Drugs

In each case the drug has to be fitted to the type of seizure and to the individual's bio-chemical make up. One may have to change drugs many times before the one suited for each case is found. While it is desirable to keep the individual on one drug if possible, there will be many who need various combinations of anti-convulsants.

The dosage will vary with each individual. Give the minimal amount that will bring results. Abrupt change of drugs is to be avoided. Gradual transfer by first adding the new medication and reducing the old is best to avoid precipitating status epilepticus.

Intake of drugs is most beneficial if small frequent dosage is used to insure steady absorption.

Three To Four Doses

Doses three to four times a day are usually satisfactory. Increase in dosage is warranted when seizures are expected (menstrual, nocturnal, etc). At least a month's trial should be given a new medication.

Close supervision of the patient should be maintained, especially during the first months he is on therapy.

One must watch for untoward drug reactions. Even dilantin sodium and phenobarbital can have toxic reactions. Some of these occur in the form of toxic psychoses. Fatal hepatitis from use of dilantin has been reported.

Hemotologic renal (and hepatic if using phenuron) status should be evaluated before starting the subject on medications.

This should be rechecked in at least a month and should be repeated every three to four months. The patient should be warned that as long as he takes medications he has to be under medical supervision. When the subject has been free of seizures and the EEG has been normal for one to three years, medications may be gradually reduced.

Surgical Treatment

The surgical treatment of epilepsy is reserved for those cases which have failed to respond to medical treatment and which give evidence of having an epileptogenic focus that can be safely removed. Gastaut gives the operative mortality as two to three per cent and therapeutic failures of 35 to 40 per cent. Other measures and regimes which are valuable are avoidance of fatigue, emotional upsets, alcohol intake and constipation. Fluid and salt intake should be reduced to a minimum. The patient should be taught to accept his condition and participate in life's activities as much as his handicap will permit.

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THE PRESIDENT'S COLUMN

Increasing Number of Medical Meetings Brings Competition For Attendance

By Celso C. Stapp, M.D., El Paso

During the past few years we have been seeing a definite change in the attendance at Southwestern Medical Association meetings. This has also been true in similar meetings over the whole country. There are certain definite reasons for this change and there are certain remedies which we will have to seek out to keep our association abreast of times.

Southwestern Medical Association has weathered two wars and the social and economic changes that have gone with it. I am sure that we can continue to progress with our work of dissemination of medical and technical information to our members, with mutual exchange of experiences and problems, thus binding the doctors of the Southwest together and better aquainting them with each other.

Specialty Societies

Since World War II the number of specialty societies and meetings have grown at a phenomenal pace. We have also had the number of prestige organizations growing. The months in the fall and spring are riddled to bursting point with meetings, and all one has to decide is where in the country one wishes to go; and one can tailor the meeting to the occasion and there is bound to be one there. At one time we were unique, as we were the only organization within one day driving in our area to offer a well rounded program.

With the advent of adequate commercial air transportation we are now the meeting that is left. This year the program was excellent and all the papers were presented in a brilliant manner. Still our total attendance was not too good. This means that we are definitely in competition not only with other meetings but with the world series and the flu. What shall we do?

The growth and health of any organization must rest on sound progressive ideas.

We feel that our membership are the people best qualified to give us those ideas.

Ideas Solicited

I urge each and everyone of you to give us those ideas. That is the secret potion which will rejuvenate our meeting and bring our attendance up. Write to the general chairman for the Tucson meeting next year, Doctor H. D. Cogswell, 1602 North Norton Boulevard, Tucson. He is anxious to have your letters telling him what you would like to have. He and his group are formulating their plans, and they would like to have your desires. I for one will be there next year and hope to see you attend and see what changes have been made.

As retiring president I wish to thank you for your help during my term in office and especially those who helped put on the program. The committee chairman and the other workers did a stellar job. Both the scientific program and the social program were excellent and we had no major mishaps. It has been an honor and a pleasure to have been your president, and I commend Doctor Louis Jeckel of Phoenix to you as your new president and a very capable and enthusiastic booster of Southwestern Medical Association.

Conservation in Skin Therapy

Holland, M. H., J. Med. Soc. New Jersey 49:469, 1952

A plea is made for conservatism in treatment of skin disorders. The author sees patients almost daily who have sensitization dermatitis due to use of creams, lotions or ointments containing one of the "—caine" group of anesthetics or the antihistaminics. He prefers Desitin* lotion which contains only the blandest of ingredients. When used in treatment of 100 patients suffering from various types of inflammatory dermatitis, Desitin lotion brought about improvement or complete relief in the majority of subjects without causing true skin sensitization.

**Contains zinc oxide, magnesium carbonate, rose water, lime water and cod liver oil. Supplied by the Desitin Chemical Co.*

Clinical Clippings, January, 1953.

ORIGINAL ARTICLES

Mechanisms of Metastasis and Their Clinical Implications*

By Colin G. Thomas, M.D., *Associate Professor of Surgery, University of North Carolina School of Medicine, Chapel Hill*

There is probably no other disease that has been the subject of such broad study by investigators in all fields of medicine and the medical sciences as that of cancer. In addition, allied fields of the physical and social sciences have made significant contributions to the further understanding of this problem. While distinct progress is evident, unfortunately much of the experimental work that is performed by those in purely investigative roles goes unnoticed by the clinician or at times seems to have little practical application. It is therefore necessary from time to time to re-examine some of our concepts of malignant disease in light of the investigative work now underway. This may not only provide the clinician with a better understanding of malignant disease but also permits him to re-examine more critically the current as well as possible practices in the management of these patients.

It is apparent that our concept of malignant disease is changing and concomitantly, there is alteration in our ideas toward prevention and treatment. No longer is all cancer regarded as a progressively malignant tumor that grows relentlessly until death of the host. Duration of the disease and size of the tumor cannot always be quantitatively related to prognosis. Similarly, the histologic appearance may not be an accurate index of the invasive potential of neoplasm.

The recognition that many neoplasms are not strictly autonomous in their behavior is best illustrated by the effect of an altered hormonal environment in carcinoma of the breast,[1] carcinoma of the prostate,[2] and carcinoma of the thyroid.[3] The chemotherapy of various neoplasms is also assuming greater importance not only as a means of treatment but also as a prophylaxis against the growth of disseminated tumor.

We are learning that not only is the biology of a neoplasm important but that in addition, the host and the reaction of the host's tissues are equally important. This is perhaps best expressed by Mc Donald[4] who contends that each cancer has certain biologic characteristics that tend to remain more or less constant throughout its life. In such a case, it is the type of tumor and resistance of the host to that tumor that largely determines the spread of cancer. By the time some cancers can be recognized clinically, they are apt already to have metastasized if capable of doing so. Others may remain local for a long period of time.

It would be well therefore to discuss some of the more recent observations regarding the mechanisms of tumor metastasis and to consider the clinical applications such observations may have. These remarks shall be confined to: **a)** factors known to influence tumor metastasis, **b)** the incidence and significance of blood stream invasion and, **c)** the significance of lymph dynamics in the dissemination of cancer.

Factors Influencing Tumor Metastasis

It is well known that the incidence of metastasis is influenced by factors which may either exert their action directly on the primary neoplasm or act upon the host in such a way that the growth of a metastasis may be enhanced. It is seldom, however, that these points are given emphasis in the management of patients with malignant disease.

In the experimental animal, gentle massage for a period of from two to five minutes over a number of days has been shown to facilitate the dislodgement of tumor cells resulting in pulmonary metastases.[5,6] Carcinoma is apparently much more readily disseminated by this technique than is sarcoma. This massage effect may be a significant but rather uncontrollable factor in the high incidence of metastases from such muscular organs as the tongue, stomach and colon in which there is almost constant activity, simulating this massage effect.

Incision into a tumor has also been shown to be followed by an increased incidence of metastases as well as facilitating direct transplantation. The accidental transplantation of tumor to donor sites of skin grafts done for radical mastectomy wounds as well as the implantation of tumor in abdominal incisions, along needle biopsy tracts, and anastomotic sites are well known clinical examples of this potentiality. In view of the high recovery of neoplastic cells from the washings of operative wounds following radical operations for cancer, it is probable that dissemination, both local and general, is much more common and significant than is realized. The importance of these considerations in the management of malignant disease should be obvious.

*Presented at Southwestern Medical Association meeting in Albuquerque, 1956.

The dissemination of neoplastic cells by factors which act directly on the neoplasm is best explained by the loss of *"adhesiveness"* of cancer cells to one another.[7] This loss of adhesiveness has been shown to be associated with a calcium deficit of the cancer cell and changes in its external surface.[8,9]

Once the neoplastic cell is separate from the contiguous cell mass, its inherent *amoeboid activity*[10] is a most important factor in its invasiveness and ability to metastasize. Spreading factors such as hyaluronidase will also enhance invasion but it has been difficult to demonstrate such factors as playing a dominant role in the human and experimental tumors.

Regardless of the route of dissemination of neoplastic cells, the reaction of the host's tissues at site of arrest will determine the survival and continued growth of the tumor. Although the mechanisms of host resistance are somewhat obscure, we do know that total body irradiation,[11] cortisone, nitrogen mustard, the vital dyes, as well as repeated bleeding may act on the host to enhance the growth of a metastasis.[12] It may be coincidental but all of these agents have in common an inhibitory or suppressing effect upon the reticuloendothelial system of the body.

Incidence and Significance of Blood Stream Invasion

The invasion of a blood vessel by neoplastic cells has long been employed by the pathologist as a criterion of malignancy and is usually considered to be an ominous prognostic finding. Yet, in many circumstances there seems to be little relationship between the demonstration of blood vessel invasion and the life expectancy of the patient. It is now becoming apparent that blood stream dissemination of neoplastic cells is quite common,[13,14] that many or most of these tumor emboli do not survive and that the most important factors in their survival are the conditions of growth as determined by the site of arrest and response of the host. Factors which influence the dissemination as well as the growth of metastases must be considered in planning therapeutic measures for their inhibition or control.

The impression that tumor dissemination by blood stream was relatively uncommon as compared with lymphatic spread was based primarily on the incidence of demonstrable blood stream metastases. In the past few years, however, several investigators have worked out techniques for identifying tumor cells in the blood stream. Perhaps the most extensive work is that of Engell in Stockholm.[13]

In studying various types of neoplasms he found that the demonstration of cancer cells in the peripheral blood was possible but too seldom successful to be of diagnostic value. However, cells in the venous blood draining the region of the tumor were readily identifiable. For example, in 76 patients with carcinoma of the rectum, neoplastic cells were noted in the venous blood in 54 per cent. In 23 patients with metastases at the time of operation or who later developed metastases, the incidence was 65 per cent.

In 48 patients surviving without recurrence, 50 per cent had positive cells so identified. Similar findings were noted in carcinoma of the breast, carcinoma of the colon, carcinoma of the stomach and carcinoma of the lung. It seemed that cancer cells were found with about the same frequency in patients surviving without evidence of recurrence as in those who developed metastases or recurrence.

With the knowledge that hematogenous dissemination of tumor is quite common it becomes even more difficult to explain their location. Some understanding of this problem comes from experimental studies of the location of the Brown Pearce rabbit tumor cells when injected into the left heart of animals.[15] Metastases under these circumstances were found to be distributed on the basis of blood supply. There was not a disproportionate number of tumor cells lodging in these viscera little known for their high incidence of metastatic tumors. However, the viability of the tumor emboli was found to be much greater where cells were arrested in capillaries than arterioles. Thus the many glomerlular loops in the kidney were to be contrasted with the spleen and thyroid for where emboli were arrested primarily in arterioles, they seemed to have greater difficulty in penetrating the wall of the vessel.

Furthermore, the majority of emboli consisted of single cells or small clumps of two to four cells all of which were quite successful in their growth. Sizable clumps did not seem necessary. Further evidence of the importance of the "soil" is that when tumor was implanted into those viscera in which metastases were uncommon, they grew as readily as when innoculated in sites such as kidney and liver.

Prophylaxis in Growth of Disseminated Neoplasm

Observations such as these serve to emphasize the importance of the host as the predominant factor in the growth of tumor emboli. Although surgical trauma may contribute to cell dislodgement and early venous ligation in the field of surgery may prevent further venous dissemination, these are probably relatively unimportant prophylactic measures against the dissemination of carcinoma.

The administration of nitrogen mustard in the early post operative period as a therapeutic agent against embolization that might have occurred antecedent to surgery would seem to be on more rational grounds. Its role would be that of assisting the factor of host resistance against those tumor emboli that have undoubtedly been occurring for some time before the surgical attack on the neoplasm. It would seem likely that the neoplasm at this time would be much more susceptible to such an agent than when it is well established as a growing tumor metastasis.

This is the concept of treatment that has been applied to control local contamination of peritoneal and other surfaces susceptible to tumor implantation. Radioactive colloidal gold has been shown to inhibit the growth of intraperitoneal rat sarcoma.[16] Its clinical application has been best demonstrated in its use after removal of ovarian carcinoma.[17]

It was with this type of prophylaxis in mind that we have been studying the effect of nitrogen mustard administered to mice after inoculating their peritoneal cavity with Erlichs Ascites Tumor.[18] We have been rather encouraged with these experimental observations in that as long as 72 hours following inoculation, the treated animals developed no evidence of neoplasm whereas 100 per cent of the controls developed Ascites tumors. Others have been able to demonstrate similar inhibition when neoplasm has been disseminated by way of the blood stream.[19] Nitrogen mustard in terms of its availability, hazard to personnel and potentials of tissue damage and side effects has many advantages over radioactive colloidal gold for these purposes.

Lymph Dynamics in the Dissemination of Metastatic Neoplasm

The mechanisms of lymphatic involvement by neoplastic cells are probably quite similar to those governing blood stream invasion — requiring an active aggresive cell with amoeboid motion. Why some tumors exhibit a greater potential for lymph vessel invasion and others blood vessel, is not apparent. Certainly, there are more exceptions to what was formerly considered a difference in the behavior of sarcomas and carcinomas than was formerly realized. This again, however, may be primarily an expression of host resistance or anatomical distribution of the vascular channels.

That the lymphatic dissemination of tumor is an active process and not merely a dislodgement of cells into lymph vessels has been demonstrated by injecting tumor cells into the anterior chamber of the eye.[20] Lymphatic metastases do not occur until there is actual invasion of the choroid and sclera. In the tumors studied this occurred as early as the fourth day and lymph node metastases could be seen in all animals by the twelfth day.

Once tumor cells gain access to lymphatics the initial dissemination is primarily an embolic phenomenon. Fortunately, lymph nodes which function as a very effective barrier to the passage of tumor emboli are interspersed between lymph and vascular channels. The efficacy of such a barrier can be examined by injecting V-2 carcinoma into the afferent lymphatics of the popliteal lymph nodes of rabbits.[21]

Excision of such a lymph node up to a period of three weeks — at which time it is nearly completely replaced by cancer — is followed by no further evidence of dissemination. After that time, however, spread to more proximal nodes occurs.

For the most part, there is very little information concerning the factors which may influence the effectiveness of a lymph node as a barrier against carcinomatous spread. The effect of certain systemic agents such as x-ray, cortisone and the vital dyes on suppressing the reticuloendothelial system and inhibiting the resistance of the host to tumor growth has already been mentioned.

In keeping with this general concept is the finding that the presence of a predominantly reticuloendothelial cell pattern ("sinus histiocytosis") in lymph nodes is correlated with a much better prognosis than in patients whose lymph nodes exhibit no such change.[22] This has been demonstrated primarily in neoplasms of the breast, stomach and bowel. Since the administration of choline may be followed by an enhancement of reticuloendothelial cell function,[23] this brings up the very distinct possibility of being to favorably influence the phagocytosis of tumor emboli by regionally situated lymph nodes.

Most of the views on the lymphatic dissemination of cancer have been based on injection studies in the cadaver and the location of metastatic cancer. With a view towards procuring further information as to the dynamics of lymphatic spread, we have been employing radioactive colloidal gold as an investigating tool.[24] Radiogold was selected for use because of its physical and biologic characteristics. It has a safe half life of 2.7 days and its emission spectrum consists of a Beta ray with very little tissue penetration. However, a fairly powerful Gamma ray constitutes about 5 - 10 per cent of the total radiation produced and thereby permits determinations of radioactivity at some distance from the location of the isotope.

It has a particle size of from 50 - 300 millimicrons which permits easy dissemination but still of sufficient size to permit phagocytosis. When injected interstitially, the dissemination of this radiocolloid is primarily by way of the lymphatics and the colloidal particles are phagocytized by the reticuloendothelial cells of the body. Animal and human experiments have disclosed the feasibility of irradiation damage even to the production of complete necrosis in lymphatics and lymph nodes. In these instances, radiogold has been found located in the subscapular and hilar regions of lymph nodes as well as the reticuloendothelial pathways which surround follicles.

In the experimental studies with this isotope, the objectives were threefold; **a)** to determine the predominant pathway of lymph flow from any particular neoplasm; **b)** to investigate the possibility of the therapeutic use of radiocolloids in the management of inoperable lymph node metastases; **c)** to observe any alteration in lymph dynamics in the presence of lymphatic metastases.

Routes of Lymphatic Flow

As a method for determining predominant routes

of lymphatic flow in the human by topographical survey, the use of radiogold is of chief value in those areas of the body which permit broad localization. This can readily be achieved in the extremities, chest and abdominal wall. For example, in the lower extremity a tracer amount of radiogold passes almost immediately to the inguinal lymph nodes with no evidence of interruption by the popliteal lymph nodes. Surveys of the anterior chest wall, both axillary and supraclavicular regions following injections of the breast disclose localization of radioactivity primarily in the axilla.

Activity over the parasternal areas can be easily identified. However, there is sufficient dissemination to the blood stream and phagocytosis by the reticuloendothelial cells of the lung and liver that interpretation is difficult. Perhaps the most significant finding is that of alteration in lymphatic flow. The absence of a predominant lymphatic flow to the axilla connotes rather massive lymphatic replacement by neoplastic cells. Under these circumstances an aggressive surgical attack will be much more likely to disseminate rather than eradicate breast cancer.

Insofar as head and neck carcinoma is concerned, the anatomy of this area does not lend itself as well to such analysis as does the chest wall and it was possible only to demonstrate a general localization of the radiogold in the region of the injection site and homolateral lymph nodes.

In all these studies, most impressive was the immediacy of dissemination. Within a few minutes after injection, colloidal particles could be found in many lymph nodes and at considerable distances from the site of the injection.

Treatment of Lymphatic Metastases with Radiocolloids

The treatment of lymphatic metastases of malignant neoplasms by injection of radioactive colloids has been suggested by several investigators on the basis of the behavior of these colloids when introduced interstitially. In fact, there have been reports advocating the treatment of inoperable metastases of carcinoma of the lung, cervix and prostate by these methods.

The irradiation of cancerous lymph nodes by disseminated radiocolloids would depend upon the ability of these nodes to phagocytize sufficient quantities of the radiocolloids to result in their own destruction. This could occur with only partial replacement of the lymph node by cancer and function of the remaining lymphatic tissue. By studying lymph nodes removed from surgical specimens previously injected with radiogold, it is possible to determine the feasibility of the therapeutic use of this isotope.[25]

Of 593 lymph nodes removed from 35 patients with carcinoma of the breast or head and neck, 374 contained radiogold and 94 contained cancer. The cancer involvement varied from partial to almost complete replacement of the lymph node. Only 33 of these 94 cancerous lymph nodes also contained radiogold. In general, within the same specimen more radiogold was usually present in normal than in cancerous lymph nodes. Furthermore, it was apparent that frequently the "normal" nodes contained no radiogold. This finding was usually associated with the presence of metastatic cancer in other lymph nodes.

Two factors would seem to militate against the effective treatment of carcinomatous nodes by radiocolloids. In the presence of metastatic cancer, there is apparently some alteration in "normal" lymphatic flow as measured by radiogold deposition.

As a result, there is no uniform distribution of radiogold even in those lymph nodes uninvolved by neoplasm. Secondly, and of greater importance, is the failure of gold to be deposited in most lymph nodes containing cancer. From studies of these lymph nodes with the dark-field microscope human cancer does not appear to contain functioning lymphatic channels and therefore, in such nodes lymphoid tissues appear to be essential for a carcinomatous node to phagocytize radiogold. The greater the replacement of the node by tumor, however, the less likely the deposition of gold colloids.

Metastases and Alteration in Lymph Dynamics

Perhaps the greatest value of these studies has been the ability to learn more of lymph dynamics as modified by the presence of malignant neoplasm. It has become quite apparent, for example, that colloid particles introduced into the oral cavity have a very wide dissemination to lymph nodes throughout the neck.

There has been very little evidence of "filtering" by more proximal nodes and quite unexpected was the finding of relatively high counts in nodes that had ordinarily been regarded as out of the field of lymphatic flow. When the base of the tongue was injected, there was quite commonly a high count in the suboccipital group of nodes which have not been stressed as a potential site of metastatic cancer. This has also been true for lesions of the tonsil. We have also noted at times a rather haphazard distribution of carcinomatous lymph nodes from neoplasms situated along the gingival margins, tonsil or tongue. Thus both the clinical findings of metastatic carcinoma as well as the wide spread dissemination of radiogold from the primary tumor sites would support the view that there is no place for limited dissections in the treatment of metastatic cancer involving lymph nodes of the neck.

In contrast to the findings in the breast, the lymph plexus from the oral cavity seems sufficiently great that despite fairly extensive involvement of lymph nodes by metastatic cancer, there is little demonstrable alteration in lymph dynamics. This has also been true in those patients having a bilateral neck dissection for their malignant disease.

Studies in Carcinoma of the Breast

Probably the greatest returns have come from studying patients with carcinoma of the breast.[26] The findings in these individuals have been most helpful in learning more about normal lymphatic flow as well as the progression of lymphatic metastases. The surgical treatment of carcinoma of the breast has been based upon the premise that this neoplasm spreads primarily by the lymphatic rout — a centrifugal embolic spread with progressive chain-like involvement of more lymph nodes. This concept plus the clinical evidence that there may be a segmental type of lymphatic flow from certain areas of the breast, has lead to the extension of surgery beyond axillary node dissection in an effort to include a greater area of potential lymph drainage.

These areas have included supraclavicular, internal mammary and mediastinal lymph nodes. The finding of carcinomatous lymph nodes in these areas of extension has been considered to be justification for this approach. The validity of these concepts, however, has never been carefully scrutinized experimentally since, until recently, most of the views on lymphatic drainage of the breast were based on studies in the cadaver and the location of metastatic cancer. These methods have not permitted a quantitative study of lymphatic flow and it has not been possible to appraise the relative importance of the various routes or under what conditions the accessory pathways may assume greater import.

Furthermore, relatively little attention has been given to the alteration in lymph dynamics that occurs in the presence of metastatic neoplasm. One purpose of this investigation was to make a quantitative study of lymphatic flow from various quadrants of the breast and in particular to appraise any significant alteration in lymph dynamics by the presence of lymph node metastases.

Thirty three patients with breast cancer were studied by these methods. Twenty patients had no evidence of lymph node metastases, and these included eight with internal mammary node dissections. Thirteen patients including seven with internal mammary node dissections were found to have one or more metastatic lymph nodes containing cancer. Of the fifteen patients having an appraisal of their internal mammary lymph nodes, four had carcinoma involving axillary and one or more internal mammary lymph nodes and three had involvement of axillary lymph nodes only. No patient had carcinomatous deposits in the internal mammary lymph nodes alone.

Distribution of Radiogold in the Absence of Demonstrable Metastatic Neoplasm

Regardless of the site of placement of the radiogold, there was usually a generalized distribution in identifiable lymph nodes. Of the 332 lymph nodes examined in these twenty patients, only sixty were not found to contain any radiogold.

Although in some individuals the lymph nodes nearest the injection site contained the greatest concentration of radioactive particles, there were many instances in which the highest node in the axilla or one of the nodes along the lateral portion of the axillary vein or in the region of the subscapular vessels had an equally high count. Considerable variation in counts per node was quite common and this could occasionally but not always be correlated with the size of the lymph node. Lymphatic flow to the internal mammary lymph nodes was merely a trickle as compared with that to the axillary chain. Although a comparison of the gold deposited in axillary and internal mammary lymph nodes is most gross, the internal mammary nodes contained less than one per cent to two per cent of the total radiogold deposited.

Even if it is assumed that the maximum number of internal mammary nodes were present and that the lymph nodes examined were representative, these figures would not be appreciably altered. It was quite clear that injection in any quadrant could be followed by the deposition of gold in the internal mammary chain.

A contributing factor to the relatively minor roles played by the internal mammary lymphatics may be the small number as well as the small size of the lymph nodes present. This would in effect produce a more ineffectual barrier and one that is soon replaced by neoplasm.

From these studies in patients without metastases and employing radiogold as a criterion of lymphatic flow, it is evident that there is very little *segmental* lymphatic flow from quadrants of the breast. All sections drain primarily by way of the axillary lymph nodes, but with some drainage to internal mammary nodes. There was a suggestion that the internal mammary nodes are perhaps relatively more important in receiving afferent lymphatics from the medial portions of the breast. However, even here, lymphatic flow is primarily in the direction of the axilla.

Lymphatic Drainage as Altered by the Presence of Carcinomatous Lymph Nodes

In evaluating the location of lymph nodes as well as the radiogold in patients with one or more lymphatic metastases, several findings were of interesr. The presence of carcinoma in the internal mammary lymphatics was always associated with axillary metastases. The location of the axillary metastases did not reflect the location of the primary tumor, although in general, the nodes of Rotter were most frequently involved with lateral quadrant lesions. In several instances what would be considered the nodes nearest the tumor were uninvolved whereas only the apical axillary nodes contained carcinoma. This "skipping" of lymph nodes has also been noted by Monroe.[27]

The presence of carcinoma was associated with a

haphazard distribution of radiogold through the uninvolved lymph nodes, as compared with the distribution in patients without metastases. This irregular distribution of radiogold in uninvolved lymph nodes can best be explained on the basis of lymphatic blockage. There are not a sufficient number of observations, however, to be able to indicate a quantitative relationship between the number of lymph node metastases and alteration in lymph flow.

The presence of extensive axillary lymph node involvement by neoplasm but without any demonstrable lymphedema, results in marked alteration in lymphatic flow such as to the opposite breast, diaphragm or hepatic lymphatics. In these individuals, there may be no demonstrable gold in axillary or internal mammary lymph nodes even though they contain lymphatic tissue as well as carcinoma.

If the dissemination of radiogold can be used as a guide to lymphatic flow from the breast, it is evident that particulate matter in any segment of the breast may pass through any of the lymphatics known to drain breast parenchyma. Despite the clinical evidence that suggests some segmental drainage from the breast, the predominant lymphatic flow from all areas as herein studied, is toward axillary lymph nodes. Less than one to two per cent of lymphatic flow is in the direction of the internal mammary lymphatics. It is likely that other accessory pathways have similar import.

Conditions are quite different and somewhat unpredictable once obstruction of some of the afferent lymphatic pathways occur. Where axillary lymph nodes are extensively involved by cancer, internal mammary, inframammary and all accessory routes of lymphatic flow are utilized. In the presence of axillary lymph node metastases, it is easy to understand the high incidence of internal mammary metastases. Whereas the axilla probably remains a more effective barrier against lymphatic spread of carcinoma because of what constitutes more or less multiple lines of defense, the internal mammary lymph nodes are few, small and probably provide a most ineffective barrier against carcinomatous spread.

These studies would seem to have the following clinical significance. In the absence of lymphatic metastases to axillary lymph nodes, the inclusion of the internal mammary lymphatic chain in an effort to encompass the regional lymph flow from the breast enhances this possibility only by the percentage of lymphatic flow to this area. This probably represents less than two per cent of total lymphatic flow. It is likely but has not been substantiated experimentally that the quantitative flow to this area from medial portions of the breast may be somewhat higher.

In the presence of axillary lymph node metastases, particularly when they occur to such an extent that there is an obstruction in afferent lymphatics and alteration in lymphatic flow, the internal mammary lymphatic chain represents only one of the alternate routes available — many of which are unpredictable. Extirpation of the internal mammary chain under these circumstances would seem to provide a relatively insignificant removal of potential areas of lymphatic drainage.

Summary

To recapitulate, it is evident that some of the factors influencing tumor metastasis can be recognized and there are some over which we may have some control. The realization of the high incidence of direct tumor dissemination during surgical treatment as well as the high incidence of lymphatic and blood stream invasion may be somewhat disheartening to the individual who associates the success of treatment with the aggressiveness of the surgical attack. Yet, such dissemination is not always synonymous with clinical metastasis and serves primarily to emphasize the importance of the host in determining growth of transplanted neoplasm.

Perhaps, more of our investigative as well as therapeutic efforts should be directed toward enhancing this host resistance to the spread of malignant disease. It is just becoming apparent that some of the chemotherapeutic agents may be more than palliative when employed in this manner.

Although for the most part, these observations and findings are discouraging to our present concepts of treatment, they are the facts as we know them. Recognition and consideration must be given to these facts if we are to intelligently employ the best methods of therapy available today.

Acknowledgement

The author recognizes and appreciates the technical assistance provided by Research Assistant, Mrs. Ethel Wilson.

The investigative work cited in this report, 24, 25, 26, was supported by a research grant (USPHS C-1915) from the National Cancer Institute of the National Institute of Health, Public Health Service.

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The Influence of Emotional Factors on Cardiac Disease

By Louis A. Selverstone, M.D., *Physician, New England Center Hospital; Assistant Professor of Medicine, Tufts University School of Medicine, Boston*

This is the fourth of an outstanding series of seven articles covering the effects of emotional stress in the practice of medicine. The articles were prepared for a symposium delivered in January at the Tufts-New England Medical Center in Boston.

SOUTHWESTERN MEDICINE wishes to take this opportunity to express its great appreciation to the Bulletin of the Tufts-New England Medical Center and its editor, Dr. Robert P. McCombs, for making this important series available for publication.

SOUTHWESTERN MEDICINE is proud to have the opportunity to publish the articles comprising this symposium on emotional stress which is believed to be the most complete and thorough discussion of this subject.

Next month: "The Influence of the Emotions Upon the Respiratory Tract," by Robert P. McCombs, M.D., Senior Physician, New England Center Hospital; Professor of Graduate Medicine, Tufts University School of Medicine, Boston.

Traditionally and poetically, the heart has always been considered to be the seat and origin of our emotions. With increasing medical sophistication, however, it becomes necessary to reverse this, to discuss the effects of the emotions themselves upon the heart!

The patient with organic heart disease, like other patients, is subject to the usual storms and stresses of life, and like other patients, adjusts to them as best he can. However, the patient with heart disease bears an additional burden, which is not present to so great a degree in patients with diseases of other organ systems—his fear of his diagnosis. Heart disease is the leading cause of death in America today, and the implications of this fact are not lost upon our patients. This terrifying fear may become the most important aspect of medical management, and may produce more disability than the disease itself.

Terrifying Experience

For even the most stable individual, to be told that his heart is diseased may be a terrifying experience, no matter how gently the news is broken. If the diagnosis is not fully understood, and if the physician's reassurance is only casual, the patient may develop exaggerated fears concerning his prognosis. Even a minor, asymptomatic electrocardiographic abnormality, of no clinical importance, may cause the patient to brood about the future support of his family, about the possibility that he may become a hopeless invalid, and about the possibility of sudden death.

When the patient with heart disease is, to begin with, an insecure and unstable person, the situation is potentially much more serious. With patients of this type, belated reassurance may be completely ineffective. Often the patient believes that the doctor is lying to him when he attempts reassurance. Some patients sink into complete invalidism, capitalizing upon their illnesses, forcing their families to wait upon them hand and foot. Others become negativistic and resistant to therapy, ignoring instructions concerning digitalis and salt restriction. Often they become very hostile, acting as if it were the physician's fault that they are ill. Some develop deep depressions, and suicide is not unknown. Accordingly it is essential that we keep in mind the fact that the diagnosis of heart disease, itself, is one of the most potent emotional influences acting upon the patient with heart disease.

Extremely Susceptible

The fact that the normal circulatory system is extremely susceptible to emotional influences is everyday knowledge. The layman is familiar with the tachycardia and rapid breathing which accompany anger and excitement, with the cold, sweaty palms and cold feet of fear, and with nervous palpitations and nervous syncope. These reflex changes are largely mediated through the autonomic nervous system. As physicians, we are familiar with the reciprocal innervation of the

heart and blood vessels by the sympathetic and parasympathetic nervous systems, represented centrally in the hypothalamus. The emergency role of the adrenal medulla and the endogenous secretion of epinephrine are also familiar stories.

Controlled studies on the physiological effects of anxiety on the human cardiovascular system in recent years have demonstrated profound effects. Hickham, Cargill, and Golden in 1948[1] demonstrated that in the majority of young adult males, anxiety had an effect similar to the administration of small doses of epinephrine. With anxiety, cardiac output increased by 50 per cent, the pulse speeded, the blood pressure rose moderately, but the peripheral resistance decreased. In a small group, however, anxiety resulted in an increase of peripheral resistance and in an elevation of blood pressure with no change or a decline in cardiac output.

Circulatory Collapse

Stead, Warren, Merrill, and Brannon[2] in 1945 showed that in certain people anxiety may be attended by circulatory collapse. The peripheral resistance may decrease, while the usual compensatory increase in cardiac output fails to occur, producing a resultant drop in the blood pressure to low levels. In these patients, the heart rate is slow and there is severe sweating and hyperperistalis, suggesting strong vagal overactivity.

Patients with heart failure usually have fixed cardiac outputs which they cannot increase.[3] As Hickham points out,[1] emotional stress in these patients may cause a marked rise in pulmonary arterial pressure, because of the inability of the left ventricle to increase its output to keep pace with the right ventricle. This is the probable explanation for the production of acute pulmonary edema by emotional stimuli.

Data Confirmed

Numerous other studies have confirmed and extended these data concerning the effects of emotions on cardiovascular response. Soldiers in the front lines have higher blood pressures than rear echelon troops.[4] Many cardiac arrhythmias, including paroxysmal auricular tachycardia, paroxysmal auricular fibrillation, and even ventricular tachycardia[5] have been attributed to emotional effects, mediated through the autonomic nervous system. Even the electrocardiogram is susceptible to emotional influence. The studies of Logue *et al.*[6] and of Magendantz[7] have demonstrated transient T wave changes under the influence of anxiety, which return to normal with rest and sedation.

Considering the complexity of the human nervous system and the impossibility of standardizing the subjective sensation of anxiety, it is not surprising that the effects of emotional stimuli upon the circulatory system are so variable. The important point is that these emotional stimuli have been shown to be capable of producing profound objective effects upon the circulation.

Physiological Effects

The widespread physiological effects of emotional factors upon the circulatory system is nowhere better seen in clinical medicine than in the management of hypertension. Human blood pressure varies from minute to minute, under autonomic control. Every physician has had the experience of finding a markedly elevated blood pressure when first examining a new patient, only to have the pressure fall dramatically after a short rest. In the hospital, one often sees elderly women without evidence of heart disease whose blood pressures on admission may be as high as 240/130. Yet after only a day or two in the hospital, without any medication, their pressures may come down to the normal range.

There is also a large group of patients with so-called "doctor's office hypertension." These patients may show no evidence of cardiac, renal, or electrocardiographic abnormality, yet may have consistently high blood pressures when the physician examines them. Freis[8] has emphasized the fact that examination by a physician may in itself produce sufficient anxiety in patients to raise the blood pressure acutely by appreciable amounts. Accordingly, he recommends that pressures be taken at home, by the patient, or by nurses or technicians. He has shown that pressures so obtained are significantly lower than when they are taken by the doctor himself. It is probable that this group of patients usually have much lower pressures than the doctor detects.

Hypertensive Headaches

Hypertensive headaches are a good example of the influence of emotional factors upon the production of symptoms. Many patients with high blood pressure have headaches, but the true hypertensive headache is a relatively rare symptom. It is characteristically occipital, occurring when the patient awakens in the morning, is often accompanied by nausea and vomiting, and usually disappears after only an hour or so. Most headaches of which patients with hypertension complain are not of this type, and appear clearly to be tension headaches of psychoneurotic origin. Stewart[9] in 1953 found that of 104 hypertensive patients who did not know their blood pressures

were high, only 17 had headaches. In a comparable group of *96* who knew of hypertension, *71* had headaches.

The influence of emotional factors in angina pectoris has been recognized since the first description of the syndrome by Heberden[10] in 1768. Heberden pointed out that angina could be produced by "any disturbance of the mind," as well as by physical exertion. This is easy to understand in the light of Hickham's work,[1] since the increased cardiac output and increased blood pressures caused by emotional excitement together result in increased left ventricular work, producing an increased myocardial demand for oxygen in the presence of a compromised coronary circulation.

Worry Factor

Frequently, in early angina, both physical exertion and emotional unrest must be present before the pain is produced. Last year I saw a Boston businessman whose office was on Beacon Hill. He could not understand at first why he sometimes got angina on walking to his office and sometimes did not, no matter what the weather conditions. On thinking over his problem, however, he spontaneously volunteered that if he worried about business matters on the way uphill, he would usually have to stop because of angina. However, if his mind were occupied with more pleasant topics, he could climb the hill without any anginal symptoms. Worry alone did not produce his symptoms, nor did the exertion alone, but the combination was usually sufficient.

Angina is, of course, a subjective sensation, and the intensity with which the pain is perceived will depend to some extent upon the personality of the patient—upon how stoical or how excitable he may be. When angina increases, particularly if the patient has been told of his diagnosis and told that it is very serious, a vicious circle may be set up. Each attack of chest pain causes severe apprehension, and the apprehension facilitates the appearance of the next seizure. The more frequent the seizures, the greater the apprehension, and hence the seizures may rapidly increase in number. This may soon result in severe angina decubitus. The agitation of these patients may be profound, and their physicians may feel themselves forced to resort to narcotics to control their pain. Sometimes these patients may be helped by strong and firm reassurance, encouragement toward limited activity, and the judicious use of sedative and tranquilizing drugs. While one does nothing for the underlying coronary disease, the relief of the emotional component may produce gratifying relief of incapacitating symptoms.

Psychic Factor

This psychic factor should be kept in mind when evaluating the results of new therapies for angina. It is a common experience that any new drug for angina works well at first, so long as the doctor communicates his confidence in it to the patient. When "double blind" tests are done, however, the medication may appear almost useless.

The results of surgery for angina pectoris should also be evaluated with this point in mind, especially since some surgeons state that patients often have relief by the first day after operation, before any new collateral vessels can be formed. The drama of a surgical operation may be a potent psychotherapeutic factor in these patients, and relief of the emotional component of their angina may produce dramatic relief. This is not to state that surgery is useless in angina, but only to point out that the mere fact that symptoms are relieved does not prove the value of an operation, where there are no controls.

Chief Symptoms

This point of view may also be applied to rheumatic heart disease with valvular damage, though here the chief symptoms are dyspnea and fatigue rather than chest pain. It should be noted that dyspnea and fatigue are also subjective symptoms, like anginal pain. Patients with valvular damage often have subjective disability superimposed upon their organic impairment. Emotional stress may produce increased pulmonary arterial pressure, and the patient's symptoms may be in part secondary to this functional cause.

It is easy to understand why strong emotional factors are usually present in rheumatic heart disease. Consider, for example, a girl who has had rheumatic fever with valvular damage at the age of 12. Perhaps overprotected by her parents, she is forbidden to play with the other children, and cannot take gym in school. At every physical examination, her physician pauses a long time over her heart, and insists on frequent x-rays and electrocardiograms. With marriage, the doctor warns against pregnancy, and during pregnancy watches her extremely closely. As time goes on she may develop dyspnea and orthopnea. It is not to be wondered that her organic disability is often complicated and made worse by a strong subjective disability, given this background of long-standing apprehension.

This point is made very clear by the following case history. A 36-year-old housewife was admitted to the New England Center Hospital four years ago for consideration of possible mitral valve surgery. She had had two attacks of rheumatic

fever, the first at the age of 12, and the second at the age of 19. During the six years prior to this admission, she had developed severe and progressive exertional dyspnea together with orthopnea and ankle edema. During the year prior to admission, she had had three episodes of hemoptysis. In spite of excellent medical management, her symptoms had increased rapidly, and at the time of admission she claimed to be completely disabled, unable to climb a half flight of stairs or to do any housework. .

On physical examination she was not in acute distress. Her heart was enlarged transversely. There was an apical diastolic thrill and a loud, snapping mitral sound. A long, low-pitched, rumbling murmur filled all of diastole at the apex, ending in a classic presystolic crescendo. There were no systolic murmurs.. The pulmonic second sound was louder than the aortic second sound. No opening snap could be heard. While the lungs were clear to examination, the liver edge was felt two cm below the right costal margin. There was no peripheral edema. .

Laboratory Studies

Her routine laboratory studies were within normal limits. Her electrocardiogram was nonspecific, showing neither right or left ventricular hypertrophy. The P waves were consistent with auricular enlargement. Careful chest x-rays and cardiac fluoroscopic studies were done. There was mild pulmonary congestion and definite right ventricular hypertrophy, together with left auricular enlargement. On fluoroscopy it was felt that there was probably some left ventricular hypertrophy as well as right ventricular hypertrophy, but the right ventricular hypertrophy seemed clearly the predominant lesion.

In her preoperative evaluation, cardiac catheterization was not done. There was general agreement that she presented the classic findings of mitral stenosis together with symptomatology which was both incapacitating and rapidly progressive. There was speculation that she might have some moderate mitral regurgitation to explain her slight left ventricular hypertrophy, but it was felt that she would benefit from relief of her mitral stenosis, and accordingly operation was recommended.

At surgery the surgeon found that the mitral valve had been markedly distorted by rheumatic heart disease to allow free mitral regurgitation. There was no significant mitral stenosis, and the surgeon could pass 2½ fingers easily through the mitral orifice.. A 4+ regurgitant jet was felt. Since nothing could be done for this, the auricle was sewed up and the chest was closed.

When the patient had recovered from anesthesia, it was felt unwise to discourage her by telling her the bad news. She was told only that the operation had gone well and that she would soon feel better. Within a few days she showed startling improvement in her symptomatology. She announced with pride that she was now able to lie flat in bed without several pillows under her head. She quickly became ambulatory and walked throughout the hospital, climbing stairs without dyspnea, telling everyone who would listen how greatly she had been benefited by her miraculous heart operation. She was discharged home very shortly, a happy and grateful patient. During the next two years she maintained a great part of her improvement. She was continued on the same cardiac regimen she had been on before operation by her family doctor, but now was able to do her housework, get around without dyspnea, and even go out dancing with her husband, something she had not done for years. During her third year following surgery, she finally again began to go downhill.

Emotional Relief

To all the physicians who took care of this patient during her hospital stay and who followed her case thereafter, her initial improvement was every bit as dramatic as that seen with patients with tight mitral stenosis whose valves had been adequately fractured at surgery. Her increase in exercise tolerance was of the same order of magnitude, and she was just as grateful to her physicians for her dramatic improvement. Yet all that had actually been done was to make a scar on her chest and to suggest to her very strongly that she was really better! While her objective cardiac disability remained unchanged, her subjective reaction to it was markedly relieved. One can speculate here that the relief of her anxiety relieved her already badly damaged heart of an additional heavy emotional burden, allowing her to experience real and lasting improvement.

It is interesting to speculate how much of the improvement we see in many patients after valvular surgery may not be due to this same mechanism. This is not at all to deny the very real value of mitral valve surgery, but to emphasize the fact that a great deal of the relief in some cases may be relief of functional disease rather than relief of the organic disability. In this connection, it should be pointed out that cardiac catheterization studies before and after mitral commissurotomy have often shown little correlation between the degree of subjective improvement attained by the patient and the change in the objectively measured values of the cardiac output,

pulmonary arterial and pulmonary venous pressures after surgery.[11]

Emotional Stresses

Up to now we have considered some of the special emotional stresses to which the patient with organic heart disease is subjected and the manner in which these emotional stresses act to produce changes in cardiovascular dynamics, and have attempted to illustrate the discussion with a few specific examples. What conclusions may one draw from the foregoing of possible value to the practicing physician?

In the first place it must be realized that one cannot take the patient with heart disease and divide his symptoms into those which are "organic" and those which are "functional," as if the patient's organic disease were "heads" and the patient's functional symptoms were "tails" on a coin. The organic and functional aspects in each patient's case are not separate from each other, but are in constant interaction. The organic disease acts upon the patient's personality, while the patient's personality, at the same time, influences and changes the course of the patient's organic disease. This constant interaction must be kept in mind with every patient, in reaching a diagnosis, in assessing the degree of disability, and in making decisions concerning therapy.

Calm Diagnosis

Since the diagnosis of organic heart disease is in itself such a threat, it is the physician's obligation to do all that he can to minimize the patient's fears, and to avoid causing additional anxiety. When a diagnosis is reached, the patient deserves a calm, careful, full, frank, yet optimistic explanation of his diagnosis, an explanation of the rationale of the treatment decided upon, and a full discussion of the prognosis. It is human nature to fear the unknown, and one can face facts far better than fancies.

It is not necessary, or indeed, desirable, however, to do this all at once on a first visit. The patient at first is often very upset, and it is amazing how outrageously the physician's explanations may be misunderstood by a very nervous patient. This education of the patient can usually be spread out over a series of visits, with careful repetition of important points, using down to earth language that the patient clearly understands.

In addition, we must be constantly on guard against creating additional and perhaps unnecessary fears. Often, we may ourselves be in doubt concerning the significance of a soft murmur, for example, or an asymptomatic electrocardiographic abnormality. It is an excellent rule, under these circumstances, to underdiagnose rather than to overdiagnose. In the long run, less harm results from a postponed correct diagnosis than from an erroneous diagnosis that one must later withdraw.

While examining the patient, it is important to realize that he is watching the doctor constantly, for what he doesn't say as well as for what he does say. The physician may have a grave face because of personal problems. The apprehensive patient may, however, misinterpret this as evidence that the doctor considers his case a very serious one. It is necessary constantly to be on one's guard against inadvertent slips, which may lead to misinterpretation.

Unnecessary Restrictions

In treatment it is important to guard against unnecessary restrictions, since the patient often interprets each restriction as additional evidence of the seriousness of his disease. Not every patient with heart disease requires a low salt diet, nor is exercise restriction necessary or desirable in many children with asymptomatic murmurs. The patient with mild hypertension without evidence of vascular disease is usually better treated with simple reassurance than with complicated schedules of hypotensive drugs. Especially with children, it is essential to protect the child against parental overprotection, since the child's whole life may be warped by excessive and unnecessary restrictions.

Finally, with appreciation of the role of emotional stress in the production of the symptoms of organic heart disease, one may also develop a most desirable skepticism toward dramatic new therapies, until they are backed by complete objective data, including proof that subjective factors have been controlled. With each new therapy, rigorous scientific proof backed by complete and adequate controls must be insisted upon.

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EL PASO GENERAL HOSPITAL

September 19, 1957

FREDERICK P. BORNSTEIN, M.D., EDITOR — Case No. 824

Presentation of case by William I. Coldwell, M.D.

History: — Dr. Nathan Kleban

A 64 year old painter was referred to this hospital by his doctor on January 27, 1957, because of anemia.

Severe weakness, aching of the legs, and anorexia were noted one month before admission. His wife thought he was very pale two weeks later. Syncope and vomiting each occurred once. There was an estimated seven pound weight loss. Chills, fever, jaundice, black stools, known loss of blood from any body opening, palpitation, shortness of breath and cough were denied.

Past history was not significant. There were no known familial blood disorders.

Physical Examination:

The patient was a pale, slightly jaundiced Latin-American man who looked chronically ill. Temperature was 99.0, pulse 100, respirations 20. Blood pressure was 130/70. Lymph nodes 1-2 cm. in diameter were felt in the neck, axillary and inguinal regions. Some felt matted. The liver edge was felt through a thick abdominal wall about three cm. below the right costal margin.

Hospital Course:

In addition to blood examinations there were two bone marrow aspirations, two lymph node (axillary) and a skull biopsy. There was a low grade undulating fever for the first and last two weeks with other sporadic slight rises. Twelve units of blood were given. ACTH was given for four days. Metacorten, 20 mg., later 80 mg., daily, was prescribed from Jan. 30 until death. Tetracycline was administered from Feb. 4 to March 14.

The patient felt much better late in February, was using a walker to go to the bathroom and had a good appetite in early March. Swelling of the neck and face in the region of the jaw angles with throat pain was present from March 18 to March 23 which subsided without treatment.

He again ate well until March 31 when he began to refuse his food, appeared despondent and voiced a feeling of hopelessness. He began to complain of abdominal pain, had loose green stools in bed, became confused, disoriented, restless. He died on April 4, the 66th hospital day, with hypotension and a black stool prior to death.

Laboratory Findings:

X-ray: February 4: Chest, ribs and skull: "Conclusions: Skull, findings suggestive of possible myeloma. There are lesions in the frontal area. Chest and thoracic spine show no significant changes."

Biopsies: February 4: Bone marrow—crest of ilium — "Erythroblastic hyperplasia."

February 4: Axillary lymph node: granulomatous lesion of undetermined type. Fig. 1. Note — Special stains for acid-fast organisms and fungi are negative."

February 14: Bone marorw (skull)— "Sections show numerous fragments of bone tissue and fibro-connective tissue. No tumor is seen."

March 25: Axillary lymph node: "Malignant lymphoma, type undetermined. Note: The changes in the lymph node compared to the previous biopsy show the presence of a progressing lesion which has features suggestive of Hodgkin's disease or reticulum cell sarcoma. In view of the bone changes the possibility of so-called 'histiocytosis X' has to be considered. I do not believe that this represents either a plasmocytoma or a chloroma."

Blood counts: Jan. 27: Hb. 4.8 gms; Ht. 11 per cent; segs. 85; lymphs. 15; wbc, 19,900

Jan. 28. Hb. 3.5 gms, Ht. 12 per cent; Segs. 73; lymphs. 16; stabs. seven; juveniles two; monos; two; total wbc 22,200
Jan. 28: (after 1000 cc. whole blood) : hb. 5.0 gms.
Jan. 30: Hb. 5.0 gms.
Jan. 30: rbc 1.49
Jan. 31: Hb. 6.9 gms.
Feb. 15: Hb. 4.6 gms. Ht. 15 per cent.
Feb. 25: Hb. 8.6 gms.
Mar. 14: Hb. 10.7 gms. Ht. 35 per cent; wbc 9,000; Segs. 81; lymphs. 12; monos. two; stabs. five
Mar. 22: Hb. 12.3 gms. Ht. 40 per cent; wbc 5,900; segs. 62; lymphs. 28; stabs. nine; juveniles one

Urinalysis: Jan. 27 —S. G. 1.026—acid, sugar and albumin negative, 2-3 wbc, occ. renal ep. cells—many coarsely granular casts, many motile bacteria, some mucus.

Sedimentation rate: Jan. 28—60 mm.
Serology: Jan. 29: negative.

Blood chemistry: Jan. 28: blood sugar — 118 mg per cent
Total protein — 9.2 gm. per cent
Albumin — 4.6 gm. per cent
Globulin — 4.6 gm. per cent
A/G — 1/1
Urea Nitrogen — 28.2 mg. per cent
Van den Bergh direct — .6 mg. per cent
Indirect — 2.75 mg. per cent.

RBC fragility test: Jan. 30—beginning hemolysis 0.69 per cent — complete hemolysis 0.27 per cent

Coombs test: Jan. 30—negative.

L-E cells: Feb. 2—No LE cells found.

Bone marrow aspiration: Feb. 1—"Morphology of the bone marrow reveals an erythroid hyperplasia compatible with acute hemolytic anemia. There is no evidence of tumor cells or blood dyscrasia."

Axillary node culture—March 26—B. micrococcus.

Prothrombin time—Jan. 28—39 per cent.

Coagulation time—4 minutes—bleeding time one minute—Jan. 28.

X-Ray Discussion — Dr. Vincent Ravel:

We have here the views of the chest and skull. We were asked to ascertain whether or not there were any osteolytic or osteoblastic lesions which could be in the nature of a malignancy. As far as the ribs and the thoracic vertebrae are concerned, we were unable to identify anything in the nature of a myeloma or reticulum cell sarcoma or leukemia of any of the lymphoblastomas that sometimes make their presence known by changes in the bony architecture.

When we came to the skull we noticed that there were certain irregular radiolucencies in the frontal region which could be venous lakes or which could be changes such as are seen in a multiple myeloma. The reason that we favored a multiple myeloma was that there is no bone reaction about the site of the radiolucencies.

No Bone Reaction

One of the characteristics of a multiple myeloma when seen in the bone is that it does not produce bone reaction. Metastatic carcinoma, even though it may produce osteolytic changes, nevertheless will show osteoblastic changes around the periphery, and this lesion does not. The remainder of the skull showed no significant changes.

The pineal could not be identified and we do not see any of the secondary signs of increased intracranial pressure, so radiographically we have little to contribute except the suggestion that this may turn out to be a myeloma. From the radiographic standpoint we have very meager evidence to suggest anything that might be pathognomonic in the skull.

Chest Films

The chest films are not the usual six foot roentgenograms which we usually see and it would be very difficult to evaluate the mediastinum. Certainly the trachea is not displaced, and whether or not the hilar vessels could be considered more prominent than usual I wouldn't want to say. The films were in the recumbent position. The diaphragms are somewhat elevated, and I would be a little reluctant, on the basis of this technique, to say that there is any hilar adenopathy.

Clinical Discussion — Dr. William I. Coldwell:

On the announcement card sent out by the hospital it said "CPC by D.W.I. Coldwell". I assure you I am cold sober tonight. In this case the presence of anemia makes one, of course, think of lead poisoning of a chronic nature in a painter.

Nothing further was done in the way of proving this and certainly the subsequent findings did not bear out this possibility. This patient had jaundice, weakness, hepatomegaly and, most significantly, lymphadenopathy. In the differential diagnoses of enlarged lymph glands there are, first, acute infections.

In this group are acute localized lymphadenopathy, including the ones associated with local infections. There is, of course, the generalized lymphadenopathy which may be found in such diseases as infectious mononucleosis and certain acute contagious disorders.

Chronic Enlargements

Chronic lymph node enlargements primarily are those of tuberculosis and the mycoses. Of course, the allergic reactions may produce lymphadenopathy, such as serum sickness which we often get following penicillin reactions.

Congenital abnormalities can be dismissed here. The leukemias of course commonly produce lymph node enlargements. Certain metastatic malignant lesions, of course, do. Here it doesn't appear to represent that sort of condition.

It seems that we are dealing with the so-called primary lymph node disorders which include the lymphosarcomas, reticulum cell sarcomas, the giant follicular lymphoblastomas and Hodgkin's disease. Biopsy of these nodes apparently showed a malignant lymphoma mentioned previously by Dr. Bornstein.

Pathological Interest

As to the specific type involved, this seems to be primarily one of pathological interest. This group of primary lymph node disorders is usually indistinguishable one from the other clinically. The lymph node enlargement is usually localized at first. Later it is often disseminated.

The glands are usually discrete and firm in the early stages. In this patient they were somewhat matted. They are often asymmetric, as opposed to leukemia which produces generally symmetricaly lymph node enlargement.

Infectious Origin

Tenderness usually suggests an infectious origin. However, in Hodgkin's disease if they enlarge rapidly, they also may be tender. A rubbery firmness is noted in most of these primary lymph node disorders. In Hodgkin's, they often become almost cartilaginous in texture.

Hodgkin's often causes enlargement of the inferior posterior cervical group which is rarely involved by infections in the throat region.

In this case the exact location, and actually the exact nature, of the glands is not mentioned in the history. I think it should be mentioned, it should be noted in the history and on the physical examination.

Fever of a low grade type, as was seen here, is often present in this group of diseases, especially in Hodgkin's. The typical Pel-Ebstein fever of course was not present. It is not found very often.

It may have been that this patient was given enough cortical steroids to control most of the fever in the later stages.

Palpable Liver

The liver is often palpable in these disorders, as we noted here. Weight loss occurred and this patient had already lost weight prior to his admission to the hospital. In these conditions many different systems are often involved.

Here the gastro-intestinal system seemed to be prominent. The patient I believe died as the result of a terminla gastro-intestinal hemorrhage. In X-ray, as Dr. Ravel has mentioned, areas of rarefaction are often seen.

Sometimes a diffuse bone marrow involvement is present. Certainly here bone marrow involvement was not present, as least in the areas that were examined, and the skull biopsies by Dr. Stratemeyer failed to show any tumor or any other involvement of this type.

Blood Affected

These lymph node disorders usually affect the blood picture and certainly here the blood was affected very definitely. Anemia is often present, it is usually normocytic in type, but here appeared to be hemolytic. This patient on admission had a very severe anemia.

The history of blood loss was absent as I mentioned in the past. There was an increase in the serum bilirubin. There was leucocytosis.

The serum bilirubin increase was chiefly of the indirect type, which would favor a hemolytic type of anemia.

A negative Coomb's test was present. There was apparent increase in the mechanical fragility of the red blood cells, and an erythroblastic hyperplasia of the bone marrow.

Normoblastic

I presume this was normoblastic; it was not mentioned which it was. No mention was made of

reticulum cells or of mitotic figures which one quite commonly sees in hemolytic anemia in the bone marrow.

No tumor or cell infiltration was noted in the bone marrow punctures. No report was made on the urine and fecal urobilinogen, which should have been increased. No mention was made of reticulocytosis or thrombocytosis.

The latter findings are common with hemolytic anemias. Transfusions were given at the start with little benefit to the patient; there was almost no response in the blood picture until steroids were given.

There was no mention made as to any reactions following transfusions.

Hemolytic Anemia

Certainly with hemolytic anemia one would expect some hemoglobinuria, increased jaundice or other evidence of a reaction unless, I believe, in one instance some packed cells were used instead of whole blood.

The leucocyte count was elevated. This often occurs in Hodgkin's disease alone and the presence of hemolytic anemia in addition would possibly indicate that both factors were operative here.

Neutrophilia was present which is also usual in both conditions. After steroid therapy the blood picture showed a definite improvement which again would favor hemolytic anemia.

As stated before, this case falls into the malignant lymphoma group. Attempts to sub-divide these interrelated tumors on the basis of rigid histologic criteria have resulted in a rather confused nomenclature which serves only to cloud the facts.

Some pathologists and even some clinicians attempt to make a differential diagnosis between these various disorders in this group. They seem to feel that it makes a great deal of difference as to what diagnosis is made.

Actually, it doesn't make too much difference; they are all malignant tumors which vary only in the degree and type of differentiation.

Histologic Criteria

You are probably familiar with Jackson and Parker's classification of Hodgkin's on the basis of the histologic criteria as to paragranuloma and granuloma or sarcoma. The paragranuloma supposedly affects the blood picture very little and apparently is a less malignant form of Hodgkin's.

The Hodgkin's granuloma is the typical Hodgkin's disease which you are familiar with and the sarcoma is almost the same as the reticulum cell sarcoma, both pathologically and clinically similar to these conditions.

Actually, there are many transitions between these different forms, and between these and the follicular lymphoblastoma, lymphosarcoma and even between some of the chronic lymphatic leukemias which have affected the peripheral blood very little.

Variations Seen

Variations are seen in both the clinical and the pathologic pictures between the various conditions in the same patient in various stages of his disease and even in the same patient at the same time when nodes are taken from different areas.

At any rate, this classification to me seems very artificial and confusing, perhaps Dr. Bornstein can illuminate the field with some newer and more confusing concepts, as he has already mentioned. For those of us in the practice of medicine the attempts to classify these disorders seems rather futile.

Our main concern is to be able to make the diagnosis from this general group and to be able to apply the types of therapy we have available. These consist of surgery first.

If there is definite evidence of localization of the nodes, certainly radical surgery should be done if at all; and in some instances where hypersplenism may be present, as it often is in these cases, splenectomy may help alleviate that.

Irradiation of course can be used if dissemination has occurred and also may be used locally after radical surgery of nodes if we think we are dealing with a localized disease.

Too often we find that it has already been disseminated prior to surgery. The final form of treatment available is chemotherapy, and here the old stand-by of course is nitrogen mustard and of that group.

We have used nitrogen mustard for a number of years in Hodgkin's mostly. It seems to help them a great deal.

It may be used when they become radio-resistant, usually after a waiting period of about six weeks. You are familiar with the dosage, .4 to .6 mg. per kilo in the use of nitrogen mustard.

We have also TEM, triethylenemelamine, essentially an oral mustard, and another drug, Lukoran, which is put out by B & W. Co. and was used in a few cases of this group with varying degrees of success.

Arthur Grolman has used colchicine, three mg. IV every three days for three weeks and it achieves some results. It apparently is a mitotic poison.

In this case the steroid hormones were used rather extensively. I think with little effect on the basic course of the disease, but it did help the hemolytic anemia, as mentioned before.

Certainly none of these drugs can be expected actually to alter the course of these conditions.

They decrease the toxicity of the patient, make them feel better and allow them to live a little more pleasant life during their remaining days.

In this case the supportive therapy included a lot of antibiotics.

I don't know just why so many antibiotics were used, they certainly have no effect on the conditions. The patient apparently had no real infection, but in the case of infections, they are indicated.

Of course transfusions were used here in large quantities.

Only Justification

In the prognosis of these conditions lies actually the only justification for using the pathologist's classification because certainly if the tumor is more differentiated, in the more differentiated group, one can say possibly that there is a litttle better prognosis.

However, to us in the practice of medicine, I think the most important thing is the response to therapy.

If the patient responds rapidly to therapy, if he apparently goes into a long remission, one can certainly say that the prognosis is fairly good.

If they have a prompt relapse or if the disease spreads soon after treatment, we can't give much of a prognosis, or much of a favorable prognosis.

The course of the disease is so variable we must use all of our available therapeutic methods, use them as early as possible, knowing, of course, that we are dealing with none that are actually curative. In this case certainly the therapy was, I consider, very discouraging.

In summary, the diagnosis that I have made is: (1) Malignant lymphoma of the Hodgkin's sarcoma or reticulum cell sarcoma; (2) Hemolytic anemia secondary to number one; (3) Terminal gastro-intestinal hemorrhage.

Clinical Diagnosis: Malignant lymphoma

Pathological Diagnosis: Hodgkin's disease of lymph nodes, spleen, bone marrow and intestinal tract.

Pathological Discussion—Dr. Frederick P. Bornstein:

On autopsy we found the body of a well developed, elderly white man. The skin and sclerae had an anemic appearance. The gross examination as a whole was not too impressive. Palpable lymph nodes were found, specially in the mediastinal, retro-peritoneal and mesenteric regions. Some of the lymph nodes showed a grayish-white, glass-like cut surface. Other lymph nodes were composed of gritty tissue.

The liver was not remarkable. The spleen weighed 350 grams which represents a moderate enlargement. However, the cut surface showed the usual splenic pattern.

The most outstanding gross pathologic change was found in the small intestine. The mucosa was edematous, swollen and this was specially prominent along the region of the Peyer's patches (Fig. 2).

On microscopic examination these lymph nodes, small intestine and spleen showed a rather typical picture composed of a mixture of large reticuloendothelial cells and Sternberg giant cells (Fig. 3). In many places the picture blended into that of a reticulum cell sarcoma. However, as a whole it was too pleomorphic.

As was noted in the history, this patient suffered from a severe hemolytic anemia, which may be explained, at least in part, by the appearance of the bone marrow.

The normal substance of the bone marrow on microscopic examination revealed an extensive replacement of the bone marrow by small granulomatous nodules (Fig. 4) which had the same histological pattern as was found in the lymph nodes, spleen and intestine.

In short, the autopsy showed an extensive Hodgkin's disease which included severe damage to the bone marrow.

To answer Dr. Coldwell's question about the classification of the malignant lymphomas and its practical value, I would like to remind you that the differential diagnosis of congenital lesions of the heart was at least as academic as the present classifications of lymphatic diseases, but in the meantime has become of extreme practical value.

I still believe that in a teaching institution we should spend considerable effort at arriving at a precise and accurate diagnosis even if it will not influence the course or treatment of the disease.

It is my personal feeling that there exist close inter-relations between the lymphatic leukemias and various lymphoblastomas.

Furthermore, in one group of lymphoblastomas cells will be produced which resemble Sternberg giant cells and these tumors therefore are called Hodgkin's sarcomas.

However, I believe that the type of Hodgkin's disease which is characterized by a febrile course and granulomatous lesions with many eosinophilic cells, pleomorphic infiltrate and many Sternberg giant cells, represents a disease sui generis and that the day will come when this differentiation will be of great practical importance.

There exists impressive evidence that this type of Hodgkin's disease may represent a genuine granulomatous lesion.

Misleading Experiences

A few words should be devoted to the misleading appearances of the various lymph node biopsies, especially the first biopsy which showed a

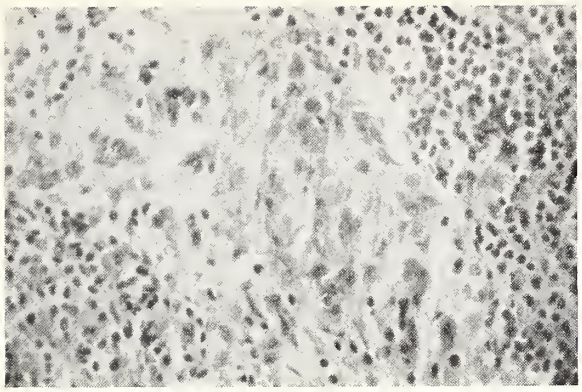

Figure 1. First surgical specimen, non-specific granuloma.

non-specific granulomatous reaction which even showed the presence of Langhan's giant cells (Fig. 1). It is very hard to decide, even retrospectively, whether or not this lymph node was affected by Hodgkin's disease.

We know from studying the lymph nodes adjacent to malignant tumors that they will react with non-specific granulomatous reaction.

Several pathologists to whom I have showed these lymph nodes feel that they represent an incidental finding but were not part of the disease.

Be that as it may, the second lymph node definitely showed the presence of a malignant lymphomatous process. Whether or not the bone lesions were actually part of the picture and can be explained by the extensive dissemination of the disease in the bone marrow I do not know.

Unfortunately, the biopsies from the bone marrow during the life of the patient did not show the nodules which were so amply present at autopsy.

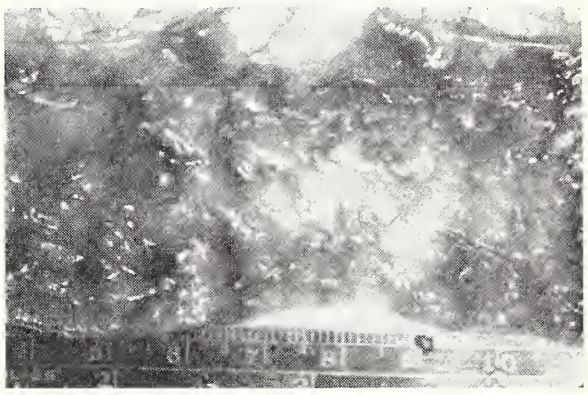

Figure 2. Autopsy, small intestine lymphoid hyperplasia.

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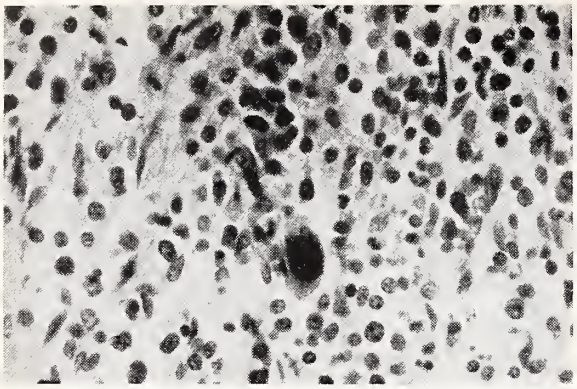

Figure 3. Microscopic intestine, typical Hodgkin's lesion.

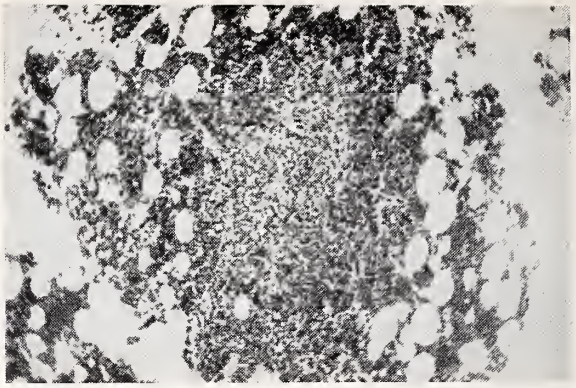

Figure 4. Bone marrow, replacement by Hodgkin's tissue.

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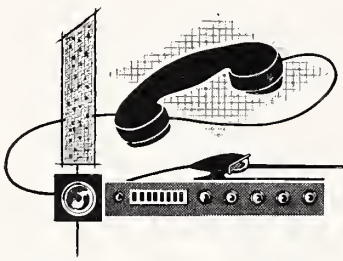

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VOL. XXXVIII DECEMBER, 1957 No. 12

EDITED BY ANDREW M. BABEY, M.D., LAS CRUCES, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

1. "It is impossible to contemplate chronic myeloid leukaemia with any feelings of satisfaction. It is true that many new therapeutic agents have been devised, but its victims live no longer now than when our grandfathers treated them with Fowler's solution." RONALD B. SCOTT, *The Lancet,* June 1, 1957, page 1103.

2. "The individual longs to be merged with the herd, but he is too self-centered to be able to do so completely and too self-conscious to be able to sustain the attempt for long. He is therefore condemned to live in a state of chronic dissatisfaction, constantly pining for something that, in the very nature of things, he can never have." A. HUXLEY, *Annals of the New York Acad. of Sciences,* May 9, 1957, page 675.

3. "It is always wise to look ahead, but difficult to look further than you can see." *A Churchill Reader,* Edited by COLIN R. COOTE, Houghton Mifflin Co., 1954, page 376.

4. "Imagination, without deep and full knowledge, is a snare." Loc. cit., page 377.

Engineers Needed

5. "Young people at universities study to achieve knowledge and not to learn a trade. We must all learn how to support ourselves, but we must also learn how to live. We need a lot of engineers in the modern world, but we do not want a world of modern engineers." Loc. cit., page 378.

6. "Man in this moment of his history has emerged in greater supremacy over the forces of nature than has ever been dreamed of before . . . There lies before him, if he wishes, a golden age of peace and progress. All is in his hand. He has only to conquer his last and worst enemy—himself." Loc. cit., page 380.

7. "There are several clues that call attention to the possibility of spurious fever: (a) failure of the temperature curve to follow the normal diurnal gradient of body temperature—higher in the late afternoon and early evening; (b) absence of tachycardia in the face of abrupt spikes in temperature; (c) strikingly rapid defervescence unaccompanied by diaphoresis; (d) presence of fever of 106° F. or higher, a relatively rare phenomenon in adults. It should be pointed out that nurses, doctors and others familiar with hospital routine are particularly prone to this form of malingering." R. G. PETERSDORF AND IVAN L. BENNETT, JR., *Annals of Internal Medicine,* June 1957, page 1059.

Fresh Urine Test

8. "Testing freshly voided urine will sometimes aid in determining the true temperature of the internal environment." Loc. cit., page 1059.

9. "The technics by which temperatures have been falsified are numerous and varied, and attest to the ingenuity of patients who practice this form of deception. Among the more commonly used methods are holding the thermometer next to a hot water bottle, steampipe, light bulb or flame, rubbing the instrument against the bedclothes, shaking it in retrograde fashion, and manipulating the teeth, gums or anal spincter to produce friction." Loc. cit., page 1059.

10. "The problems of treatment in chronic lymphatic leukaemia are quite different from those in the chronic myeloid variety. In myeloid leukaemia complete remission of limited duration can be confidently expected; but in lymphatic leukaemia it is unusual. Enlarged lymph-nodes may shrink, and the raised leucocyte-count may fall, but improvement in general health and repair of anaemia, as a result of treatment, are rare." RONALD B. SCOTT, *The Lancet,* June 8, 1957, page 1165.

Atrial Septal Defect

11. "The contrast between the paucity of symptoms and the large heart is characteristic of atrial septal defect." MAURICE CAMPBELL, CATHERINE NEILL, S. SUZMAN, *British Medical Journal,* June 15, 1957, page 1375.

12. "The most characteristic sign (in A.S.D.) is the discrepancy between the small pulse and the widespread overactive precordial pulsation, seen all the more easily because of the thin chest." Loc. cit., page 1375.

13. "A short diastolic murmur at the apex was heard in half our patients, and more frequently in those who were seen several times and in those with a large shunt and a large heart. When this murmer becomes prolonged and continues to the first heart sound it is hard to exclude associated mitral stenosis, but this is less common than was thought." Loc. cit., page 1376.

14. "Congresses have become too large and too frequent if their object is the advancement of medicine and the promotion of friendship among physicians. The cost per head rises steeply when the attendance exceeds a few hundred, and the organisers become preoccupied with the physical problems of the meetings, the organisation of entertainments and the collection of subventions from pharmaceutical and other industries." L. J. Witts, *The Lancet*, June 22, 1957, page 1291.

Increasing Specialization

15. "The present generation of consultants have never been general practitioners. They have planned their own careers and applied their own labels. Further, most of them have found that the way to success has been through increasing limitation. They are one-tool technicians or one-disease diagnosticians. On the whole they have had a simpler training and they lead an easier life than the general practitioners, and they often have less ability and certainly less wisdom." Sir H. Ogilvie, quoted from *The Lancet*, June 22, 1957, page 1270.

16. "If vitamin E does have any effect it is probably a pharmacologic one related to its capacity as anti-oxidant rather than in restoring a deficiency. Its use in therapy now occupies that unhappy terrain between hoax and placebo." W. Bean, *in Clinical Physiology by* A. Grollman, McGraw Hill, page 165.

"POINTERS"

From the Case Records of the Massachusetts General Hospital, 1955*

(continued)

38. "So-called lymphangitic carcinomatosis of the lungs, and the site of origin may have been any one of a number of organs: in a bronchogenic carcinoma of the lung itself, the thyroid gland, the breast, the kidney, the pancreas, the gastrointestinal tract, the cervix or fundus of the uterus or a sarcoma or melanoma." loc. cit.; p. 656

Coarctation

39. "It is easy to miss the diagnosis of coarctation, and the diagnosis will continue to be missed until we keep in mind that it can be excluded only in one way—that is, by demonstrating that the systolic blood pressure in the legs is higher than that in the right arm. It is important to remember that it is not posssible to rely on the presence of good femoral pulses to rule out the presence of coarctation. Occasional patients are seen in whom the leg pulsations are of essentially normal amplitude and in whom coarctation of a high degree exists." loc. cit.; p. 699

40. "About 15 per cent of the patients who come into the hospital with typical renal colic will not have any x-ray evidence of a stone in the ureter. Moreover, the stone may not be found in the urine even though the urine is carefully strained, because a tiny fragment of a stone, a millimeter or two in diameter, can cause as severe renal colic as one that is eight or ten mm. in diameter." loc. cit.; p. 880

41. "Although it is generally true that vocal cord paralysis with tumors of the lung is a sign of inoperability, in a few cases such tumors are resectable, particularly when the paralysis of the vocal cord has resulted from metastasis to a single lymph node." loc. cit.; p. 933

Vocal Cord Paralysis

42. "I have seen paralysis of the vocal cord of six months duration with mitral stenosis that disappeared after commissurotomy." loc. cit.; p. 934

43. "Buchbinder and Saphir, some years ago, showed that in most of the patients who have heart failure with subacute bacterial endocarditis, the failure is probably due to failure of the myocardium itself as the result of the miliary infarcts." loc. cit.; p. 985

44. "It is important to realize that the fact that an abscess in the lung or an area of pneumonitis clears, does not rule out carcinoma as the underlying process." loc. cit.; p. 1131

45. "Even at operation in many cases it is impossible to tell whether enlarged lymph nodes are inflammatory or filled with tumor." loc. cit.; p. 1131

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*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. **Andrew M. Babey, M.D.**

ORIGINAL ARTICLES

Fractures of the Extremities in General Practice* **

By J. J. Hinchey, M.D. and P. L. Day, M.D., *San Antonio*

Fractures of the extremities are only one of many worrisome problems confronting the general practitioner. Established principles of treatment of specific types of fractures should be readily available to him. Criteria for satisfactory end results should similarly be at his ready disposal.

It is impossible to include such data regarding all fractures in a single paper. Nor can the exceptions to general rules be discussed. Fractures in children comprise an entirely different subject and are therefore excluded. Specific representative fractures in the extremities will be reviewed.

Carpal Scaphoid (Navicular)

Fractures of the carpal scaphoid are often unrecognized because of two factors: (1) the physician does not think of them, and (2) x-ray confirmation is sometimes difficult. Tenderness in the anatomical snuffbox on the radial side of the wrist should make one suspicious of such a fracture. X-rays must visualize this bone well. If in doubt, oblique views of the wrist and an A-P view with the hand in ulnar deviation are necessary. X-rays should be repeated in seven to ten days if unexplained wrist pain persists.

The wrist is immobilized in dorsiflexion with the hand in a grasp position. The cast extends from just below the elbow to the distal palmar crease of the hand and the interphalangeal joint of the thumb. Immobilization is necessary for at least two months and may be required for much longer. Union is slow; avascular necrosis of the proximal fragment may occur. The rate of nonunion is relatively high.

Distal Radius and Ulna

Colles fractures and other fractures of the distal radius and ulna have been covered fully in readily available papers devoted solely to them. Open reduction is rarely indicated. Two anatomical facts should be kept in mind: (1) The radial styloid extends further distally than the ulnar styloid; (2) The radio-carpal joint is angulated twenty degrees palmarward.

If the wrist is placed in acute flexion to maintain reduction, it should be brought to neutral within two weeks. The cast should extend from above the elbow to the distal crease of the palm, leaving fingers and thumb free. Six weeks immobilization is generally sufficient. In elderly patients, radial shortening is a frequent complication; trial of use for six months usually results in satisfactory function in these cases.

Radius and Ulna — Shaft

These fractures are generally underestimated. Closed reduction is usually unsuccessful and infrequently maintained. It does, however, result in more certain healing in a shorter time. There are three deforming factors affecting either or both bones: (1) shortening; (2) rotation; (3) angulation — particularly migration toward the midline. Any one of these will likely produce a poor result.

Open reduction must be adequate. Wiring of the fracture is unsatisfactory. Plating should follow sound principles: (1) at least two screws in each main fragment, and (2) all screws should penetrate the opposite cortex. We prefer Eggers plates and screws for the contact compression so ably demonstrated by him. Plates should be at least three inches long.

Intramedullary fixation similarly should follow proven rules: (1) the pin should extend well beyond the fracture in both directions and (2) it should be of large enough calibre to stabilize the fracture. Kirschner wires are too small. The ulnar fracture is opened and the pin driven retrograde out the olecranon till the lower end is at the fracture site. The fracture is reduced and the nail driven back down the intramedullary canal of the distal fragment. The radial pin is inserted proximally from just above the radial styloid up to the fracture site. The fracture is reduced and the nail driven on up the proximal intramedullary canal. If the fracture is unstable with intramedullary fixation, plating is preferable.

The bones should be approached surgically from separate incisions—the ulna over its subcutaneous border the radius dorsolaterally. Union occurs slowly—three to four months is frequently required. Primary auxiliary bone grafting has been advocated in some instances.

Head of Radius

Undisplaced fractures of the head of the radius require no definitive treatment. Active motion within the limits of pain is begun early and steadily increased. Displacement, comminution or severe angulation is an indication for open excision of the radial head. This should be done in the first few days. Excision should not extend as far distally as the biceps tubercle. Early active motions

*Presented at the meeting of the Texas Medical Association in April 1957.

**Dr. Hinchey was President of the Texas Orthopaedic Association 1956-1957.

are then instituted. A good result may be anticipated although minimal limitation of elbow extension and rotation may be present.

Olecranon

Closed reduction is used only if there is no displacement or separation. Open fixation with a long screw or threaded pin is far superior to wiring. Five weeks immobilization in a long arm cast suffices. If the joint surface is comminuted, up to sixty percent of the olecranon can be excised; the triceps should be resutured to the ulna. Active motions may then be started after three weeks. Functional results are good.

Shaft of Humerus

Almost all humeral shaft fractures can be cared for with a hanging cast. The cast extends from the axilla to the mid-palm; a loop of plaster at the wrist is included. The sling passes through this loop so that the cast and arm swing free. The forearm is neutral except in fractures of the lower third of the shaft where pronation is usually required to prevent angulation. The cast must be light; distraction due to a heavy cast is an all too frequent complication. The fracture should be checked frequently by x-rays, preferably upright. The patient is generally advised to keep propped up in bed the first few nights. If recumbency is essential, a second plaster loop at the elbow for traction over the foot of the bed aids in reduction. Early pendulum shoulder motions may be started. The cast can often be discontinued in six weeks.

Open reduction is rarely indicated. Multiple screws, plating and intramedullary fixation are acceptable if sound principles of their use are followed. The radial nerve should be exposed to avoid injuring it. The intramedullary pin is generally introduced at the greater tuberosity and driven distally. Distraction must be carefully watched for at surgery and in follow-up. Intramedullary fixation cannot be used in fractures of the distal third. If plating is performed, the plate should be at least three inches long and preferably longer. Multiple screws may suffice in oblique or spiral fractures.

Neck of the Humerus

Many of these fractures are undisplaced and impacted or minimally displaced. A sling is generally all that is necessary to maintain the position and prevent distraction. A hanging cast will frequently reduce a displaced fracture, although closed reduction may be necessary. Lateral traction in bed or open reduction is resorted to only in the exceptional case. Early active pendulum shoulder motion is extremely important. It should be followed by abduction exercises. Union of these fractures is the rule. A stiff painful shoulder may result, however, if motions are not started early and followed through.

Os Calcis

These fractures should be suspected in a fall from a height or an explosive blow from below. They are generally comminuted. The pull of the gastrocnemius-soleus may displace the posterior tuberosity upwards; this flattens the arch and decreases the leverage of these muscles. There is often extrusion of bone laterally under the lateral malleolus, broadening the heel. Involvement of the subastragalar joint is common. Regardless of treatment, such fractures generally result in residual pain and disability.

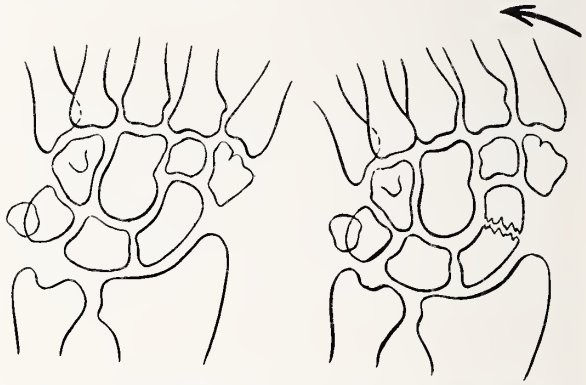

Fig. 1: Hairline fracture of navicular, demonstrating widening with ulnar deviation.

A satisfactory x-ray reduction can generally be secured by manipulation. Lateral compression with a clamp disposes of the lateral mass—width of the opposite heel is a good guide. The tuberosity can usually be pulled down manually into position under good anesthetic relaxation. A cast from mid-thigh to toes with the knee flexed relaxes the gastrocnemius and prevents redisplacement. After a few weeks a short leg walking cast may be substituted for an additional six to eight weeks.

Pain, swelling and stiffness persist for several months. Subastragalar fusion is often required if this joint is much involved.

Ankle

Lateral malleolar fractures are rarely significantly displaced. A short leg cast with early weight bearing and five to six weeks immobilization is the usual treatment. Actual callus formation is slow and is preceded by good function.

The medial melleolus is the key to proper handling of bimalleolar fractures. It is difficult to overreduce such fractures. Marked inversion is often necessary to secure and maintain reduction; it should be corrected in three weeks. If the medial malleolus cannot be anatomically reduced by closed manipulation, early open fixation of it with a screw or threaded pin is recommended. The fibula moves with the foot and its fracture, together with any ankle dislocation, is nearly always

Fig. 2: Fracture of both bones of forearm with adequate intramedullary fixation.

automatically reduced when the medial malleolus position is corrected.

Trimalleolar Fractures

Trimalleolar fractures require good reduction of the posterior tibial fragment as well as the medial malleolus. Downward traction should be exerted on the foot before any attempt is made to correct the accompanying posterior dislocation of the ankle. The foot is next brought forward while the traction is maintained. It is then dorsiflexed and inverted. The maneuver is more easily accomplished with the leg dependent so that gravity is an aid. Displacement upwards of the posterior tibial lip of more than one-fourth inch is unsatisfactory, indicative of re-manipulation or open reduction. Accurate apposition of the medial malleolar fracture is essential just as in bimalleolar fractures. The leg should be immobilized from mid-thigh to toes with the knee flexed to relax the gastrocnemius. After three weeks a short leg walking cast may be substituted and continued for about six additional weeks.

Tibia and Fibula

Fractures of the tibia and fibula may be classified as stable and unstable. Stable fractures include (1) fracture of either bone without the other, (2) greenstick fractures, (3) impacted or undisplaced fractures and, (4) those in which the fracture of one or both bones is transverse. These are amenable to closed reduction and a long leg cast.

Unstable fractures include oblique, spiral, segmented and comminuted fractures. Closed reduction is rarely maintained. Either skeletal traction through the os calcis or open reduction is indicated. The former requires close supervision to maintain position and prevent pressure sores. If open fixation is used, it should be adequate. The incision should never be made over the subcutaneous anteromedial aspect of the tibia; Nor should a plate be placed on this surface. Multiple screws suffice in some spiral and oblique fractures. Plating should follow accepted principles already outlined. Plates should be no less than four inches long and frequently longer. Each main fragment should be held by at least three screws. Intramedullary fixation has been of particular value in segmental fractures; It should not be used for fractures near either end. The pin is inserted just lateral to the tibial tubercle and must be kept parallel to the tibial shaft. It should extend to within one-half inch of the distal end of the tibia.

Patella

Undisplaced fractures require only maintenance of extension of the knee in a cylinder cast from groin to ankle for approximately four weeks. Quadriceps exercises should be maintained.

Displacement of more than one-fourth inch indicates tearing of the quadriceps on each side. Open repair is imperative. Suture of these quadriceps expansions should be emphasized since good knee function depends upon it. If the patella is not comminuted, anatomical reduction by interrupted suture across it and a re-inforcing purse-string around it will result in early healing and good function. Wire sutures have often produced residual pain, necessitating their removal.

More often the patella is comminuted. If there

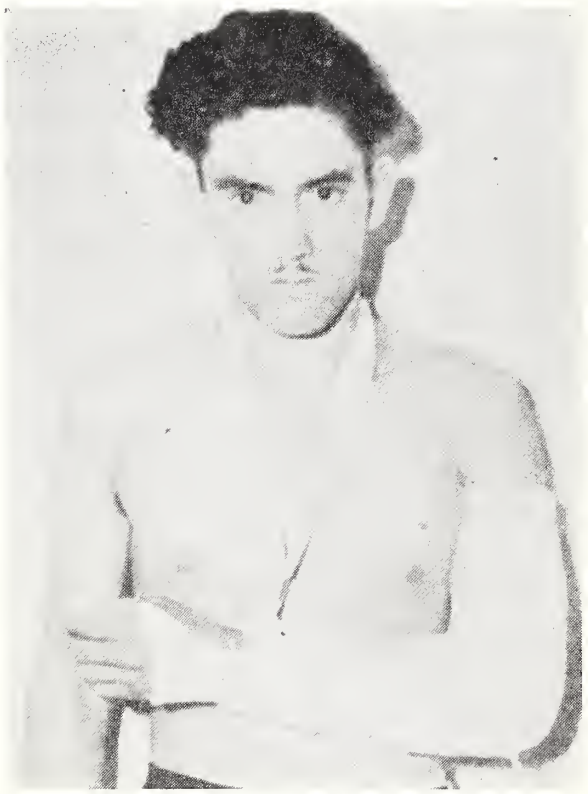

Fig. 3: Hanging cast for fracture of shaft of humerus.

is a large proximal or distal fragment, it alone is saved and the remaining pieces are excised. As much quadriceps tendon as possible is preserved. This is then sutured together including the remaining large fragment. Complete patellectomy and quadriceps suture is performed in severe comminution with no large fragment.

Open repair is followed by immobilization in a cylinder groin to ankle cast with the knee extended. Quadriceps exercises are instituted immediately. The cast is removed in four to six weeks and active exercises are carried out. End results are generally good.

Shaft of the Femur

Short oblique and transverse fractures of the femoral shaft are ideally suited to intramedullary nailing. The fracture should be at least two inches below the lesser trochanter and four inches above the epicondyles. Other types of femoral shaft fractures may be handled by this method, but extraordinary skill is generally required. The advantage of the method lies in the absence of need for immobilization; thus there is no loss of joint motion or muscle power. Short hospitalization and early return to light work or school are economic factors.

The length of nail to be used may be obtained by measuring the opposite thigh from greater trochanter to lateral epicondyle. The surgery is best performed with the patient on the side. The

Fig. 4: Eggers plate and screws for unstable tibial fracture. Six screws penetrate opposite cortex.

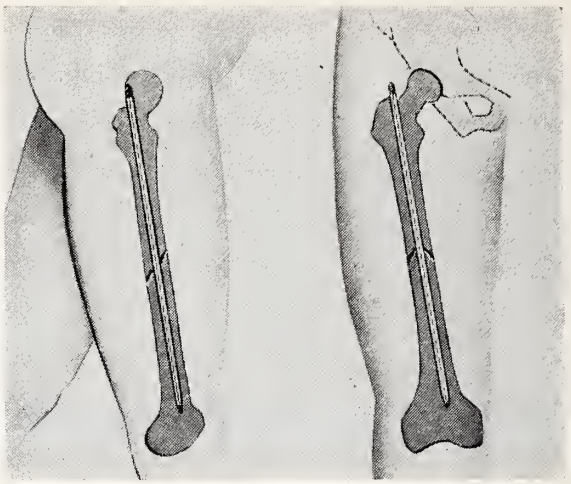

Fig. 5: Diagram of proper length and position of intramedullary Street nail in femur. Slight projection of threaded end above neck for easy removal.

nail should pass easily in the medullary canal of both fragments. The narrowest portion of the canal is located at the upper third of the shaft. A reamer is of great help in preventing incarceration of the nail in a small medullary canal. The nail is driven retrograde from the fracture into the buttock and out through a stab wound made over it. The fracture is reduced and the nail driven down the intramedullary canal of the distal fragment until the upper nail end is at the level of the greater trochanter. Quadriceps-setting is started immediately and progressive exercises carried out as rapidly as possible. The patient may be permitted up in the first few weeks and gradual weight-bearing is then instituted. Reactive callus is seen early and may be misleading. Intramedullary nails have been removed too soon at times and refracture resulted. The nail may only rarely be removed with safety in less than nine to twelve months. The callus should be mature with retrabeculation and the medullary canal clear across the fracture site. Removal of the nail through the buttock wound is usually quite simple.

Summary

General rules of diagnosis and treatment of certain specific extremity fractures have been reviewed. Pitfalls are pointed out. It is recognized that there are specific exceptions to each precept. Adherence to proper rules will be of material aid in handling the vast majority of these fractures.

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The Role of Newborn Position in the Development of Pulmonary Hyaline Membrane

A PRELIMINARY REPORT

By Jack Curry Redman, M.D., A.A.G.P., *Albuquerque*

Editorial Comment

The concept concerning the pathogenesis of pulmonary hyaline membrane of the newborn as set forth in this article has in the opinion of some workers much to recommend it; and while this is, as the author has distinctly stated, a preliminary report, the Editors of SOUTHWESTERN MEDICINE feel that it should be of value to all, and at least receive their consideration.

Pulmonary hyaline membrane of the newborn has, in the past few years, become a problem of increasing magnitude. The number of reported cases mounts daily, and yet the pathogenesis of the disease is not at all clear. In my own practice I have encountered an increasing number of cases of this disease, and have employed a number of recommended treatment programs, sometimes with good results, but too often with unfavorable results until recently.

Certainly the best treatment of pulmonary hyaline membrane is the prevention of premature labor and delivery. We are, nevertheless, confronted by enough premature babies and babies delivered by Cesarean section to keep the problem of pulmonary hyaline membrane constantly in focus.

Other Factor

In some of my own cases treated according to the recommended routine there seemed to me to be some other factor which we were overlooking, for some of these babies died despite therapy. I asked myself many times what we, as physicians, might be doing to hasten the development of pulmonary hyaline membrane.

Recently I have had two cases, admittedly not statistically significant, which I feel must be reported, for I feel that, perhaps, we may, at least, be able to prevent pulmonary hyaline membrane in our premature and section babies. Dr. William K. Woodard, a pediatrician in Albuquerque, has recently completed a splendid study, soon to be published, on the pathogenesis of hyaline disease of the newborn.

The humidification used in my two cases is that recommended by Woodard. He feels that the basic underlying cause of hyaline membrane disease is an abrupt change in the oxygen concentration of the peripheral blood of the newborn delivered prematurely or by Cesarean section. I feel that Woodard's concept is extremely important.

I feel, also, that the two cases presented here are extremely important in calling attention to an additional, iatrogenic component in pulmonary hyaline membrane disease.

Case One. Baby girl Bu.

I delivered the baby vaginally, under local anesthesia, at six and one-half months gestation on September 19, 1957. The mother had a marginal placenta previa and premature labor. The baby's immediate condition was good. She weighed three pounds two ounces.

Physical examination was normal for age. She was placed in an isolette with sterile anniotic fluid humidification using compressed air, according to the method of Woodard. Within thirty minutes she began to grunt on expiration, and her respiratory rate increased. Soon inspiratory intercostal retraction was present along with cyanosis of the hands and feet, and it was obvious that pulmonary distress was developing as I watched.

Various Positions

Rather than begin oxygen therapy, I decided to observe the effect of various positions on the respiratory distress. I changed her from prone, to supine, to right and left lateral decubitus, without any effect. Then I did as most of us have done in the past—elevated the foot of the crib "to promote pulmonary drainage and increase cerebral blood flow."

Just as I did, it occurred to me how this position was actually adding to the respiratory distress by decreasing vital capacity, and forcing the baby to breathe against gravity. It also occurred to me that cardiovascular distress was also being produced, possibly with an element of congestive failure.

I reversed the baby's position and elevated the head and body about thirty degrees. Within the next thirty minutes the grunting and retraction

Acknowledgement. The author expresses his gratitude to William K. Woodard, M.D., for his invaluable assistance, and for permission to refer to his yet-unpublished work.

gradually ceased. The cyanosis cleared. The baby has continued to do well.

Case Two. Baby boy Be.

A few days later, a wonderful—yet terrible—opportunity presented itself. One of my obstetrical patients, a forty year old primigravida, was brought to the hospital with fulminating toxemia of pregnancy at six months gestation.

She had had an uneventful course until the night of admission, when she began to convulse. Her husband stated that she had had severe headaches for the previous three days, but "thought it was her sinuses." Her prenatal course had been otherwise uneventful.

Obstetrical consultation was obtained and medical treatment was begun. The convulsions ceased. Her blood pressure gradually returned to a normal level and her urine began to clear.

Then, five days after admission, her pressure began to rise again despite treatment, and it was felt best to terminate the pregnancy by Cesaeran section. The baby had remained normally active throughout the mother's illness.

Cesarian Section

I performed a low cervical Cesarean section and delivered a viable male infant weighing three pounds two and one-half ounces. He was placed immediately in an isolette, head elevated thirty degrees. Sterile amniotic fluid humidification was used.

Dr. Woodard, the pediatric consultant, was present at the time of delivery. The baby's physical examination was normal for age except for absent breath sounds throughout both lung fields.

Despite this however his color was excellent. The chest was fairly fixed in inspiration. His diaphragmatic excursions were shallow. There was minimal retraction. There was no cyanosis.

For the first hour of life there was expiratory grunting. Gradually, within the next few hours, breath sounds appeared in both lung fields, as the lungs expanded. The baby has continued to do well, and likewise the mother.

Summary: The case histories of two newborns are reported. The first case was very valuable, for a possible iatrogenic factor in development of pulmonary hyaline membrane was recognized. The second case was even more valuable, for all possible factors for development of hyaline membrane were present: it was a premature infant of but 26 weeks gestation, delivered by Cesarean section of a mother with severe toxemia of pregnancy. Neither baby developed pulmonary hyaline membrane, and both are currently well.

Conclusions: Whereas the two cases presented do not permit one to draw conclusions of statistical significance, it is felt that a contributing, iatrogenic factor in development of hyaline membrane disease is improper positioning of the susceptible newborn infant. It is felt that placing these infants in horizontal or head-down positions adds to their cardiovascular and respiratory distress, and may be a large factor in the development of hyaline membrane. It is recommended that all susceptible newborns be placed in incubators, the head and body being elevated to a thirty-degree angle. Humidification of some type, amniotic fluid (Woodard), or water, and oxygen only for severe cyanosis, as recommended by Woodard, is advised. It is hoped that those in large centers may be able to evaluate critically the methods herein described. It is hoped that these two cases may represent a turning point in our struggle against pulmonary hyaline membrane disease of the newborn.

Medical History Medal For Best Student Essay

In order to stimulate interest and research in medical history among students of the Medical Schools of the United States and Canada, the American Association of the History of Medicine has established a Medal that will be granted annually to the author of the best student essay submitted to the Association. The Medal has been named in honor of William Osler.

The Association will consider unpublished essays by men and women who were students in Schools of Medicine and had not yet obtained their doctor's degree at the time the essay was written. To be considered, an essay must be submitted before or within one year after the author's graduation.

Essays that are the result of original research will be given preference, but the Association will also consider essays which, without being the result of original research, show an unusual appreciation and understanding of historical problems.

Essays should not exceed 10,000 words in length. Contestants are reminded that essays must be entirely their own work and that no entry will be considered if the author has received help from any source other than the usual courtesies extended by libraries, museums, and similar depositories to all investigators.

Essays must be sent before April 1st, 1958, to Dorothy M. Schullian, Ph.D., Chairman National Library of Medicine, History of Medicine Division, 11,000 Euclid Avenue, Cleveland 6, Ohio.

Members of the William Osler Medical Committee are George J. D'Angelo, M.D., Durham, North Carolina; Charles D. O'Malley, Ph.D., Stanford, California; Dorothy M. Schullian, Ph.D., Chairman, Cleveland, Ohio.

The Influence of the Emotions Upon the Respiratory Tract

By Robert P. McCombs, M.D., *Senior Physician, New England Center Hospital; Professor of Graduate Medicine, Tufts University School of Medicine, Boston*

This is the fifth of an outstanding series of seven articles covering the effects of emotional stress in the practice of medicine. The articles were prepared for a symposium delivered in January at the Tufts-New England Medical Center in Boston.

SOUTHWESTERN MEDICINE wishes to take this opportunity to express its great appreciation to the Bulletin of the Tufts-New England Medical Center and its editor, Dr. Robert P. McCombs, for making this important series available for publication.

SOUTHWESTERN MEDICINE is proud to have the opportunity to publish the articles comprising this symposium on emotional stress which is believed to be the most complete and thorough discussion of this subject.

Next month: "Emotional Factors in Rheumatoid Arthritis," by Evan Calkins, M.D., Assistant Physician, Massachusetts General Hospital; Associate in Medicine, Harvard Medical School, Boston.

There is a lot of talk about bodily changes induced by emotion, but much of this is based upon impression rather than fact. Few objective studies of changes in the respiratory tract have been made under situations of life stress and emotional conflict.

Wolff[1] observed that the mucous membranes of the nose and lower respiratory tree exhibited engorgement, inflammation, ischemia, edema, erosion, increased secretion of mucus and altered reactions to chemical stimulation.

During discussions of emotion-provoking subjects, bronchospasm was observed bronchoscopically[2] and sustained diaphragmatic contraction noted fluoroscopically.[3] These changes are capable of inducing profound physiologic disturbances and a variety of other symptoms, which in themselves may create still further anxiety and even more disability.

Conditioning by previous experience is believed to play an important role[4] inasmuch as symptoms are most apt to appear when attention has been called to the heart and lungs. At times the difficulty seems to run in families.

Psychosomatic Disturbance

Chronic vasomotor rhinitis is often considered to be a psychosomatic disturbance, but facts relating to this point are still quite sketchy. It has been observed in patients with ragweed hay fever, however, that the allergic reaction of the nasal mucosa to inhalation of standard quantities of pollen often depended upon whether or not there was pre-existing nasal hyperfunction in response to other stressful situations.[5]

This factor also may in part be responsible for the irregular reactivity of the nose in most individuals following nonspecific irritations caused by fumes, strong odors and smoke.

Symptoms relating to the respiratory tract are almost invariably present in anxiety neurosis. These consist of tight feelings in the chest, shortness of breath on exertion, the inability to take a deep breath, and pains around the lower thorax; patients are often observed to hyperventilate unconsciously and to complain of the sequelae of hyperventilation: dizziness, blackout spells, headache and paresthesias. There are physiologic explanations for most of these.

Increased Tone

Increased tone or spasm of skeletal muscles occurs during episodes of anxiety. During hyperventilation there is air trapping and increase in residual air. When this phenomenon is watched fluoroscopically, symptoms of tightness in the chest and sighing develop after a certain critical point is reached. These patients then are forced to breathe in a hyperinspiratory phase and it is obvious that they then cannot take a normal amount of air into the chest.

Hyperventilation of moderate intensity is accompanied by a decrease in cerebral blood flow of 30 per cent with a reduction in cardiac output of approximately 11 per cent.[6] Respiratory alkalosis is induced by hyperventilation, and in alkalosis there may be a reduction of as much as 6 per cent in the amount of oxygen released in the tissues.[7] With the combined effect of decreased blood flow

plus a smaller percentage of oxygen released, it is no wonder that these patients complain of mental confusion, paresthesias and "blackout" spells.

Subject to Error

It is well known that the determination of the basal metabolic rate is subject to many errors in patients with anxiety neurosis. The spirogram shows characteristic spiking from repeated sighing respirations; patients are restless, do not tolerate the mask and are apt to hyperventilate, usually giving rise to high oxygen uptake and an erroneously high metabolic rate.

Occasionally, however, if there is sufficient air trapping within the lungs, an erroneously low value for oxygen uptake will be recorded and consequently the metabolic rate will be reported as being low.

Cohen and White[8] demonstrated that patients with anxiety neurosis during heavy muscular work exhibited poor ability to take up oxygen and had higher concentrations of lactate in the blood when compared with healthy controls.

They had low ventilatory efficiency and poor ventilatory function with a high oxygen debt.

Poor Conditioning

These observations may have actually reflected only poor physical conditioning. Poor physical conditioning also is a possible explanation for the prolonged disability that is apt to occur when these patients suffer from organic medical or surgical illnesses.

Barach and Bickerman[9] have stressed the importance of encouraging patients with emotional disability to partake in graded exercises to improve their general physical condition and thus improve respiratory efficiency, just as patients with medical and surgical illnesses are reconditioned by early activity.

Patients with anxiety neurosis are unusually sensitive to painful stimuli and often react with hyperventilation to the wearing of tight clothing.

Breathing in the hyperinflated state is occasionally used with gratifying effect by young ladies and especially some actresses who consciously or unconsciously have learned the trick of overexpanding the upper part of the lungs for cosmetic purposes.

Emotionally Disturbed

Patients who are emotionally disturbed can develop serious disturbances of pulmonary function indirectly. The tense person is often a heavy smoker and as a result has a chronic cigarette cough. This is a precursor of pulmonary emphysema.[10]

In emphysema there is a higher statistical correlation with heavy smoking than there is between heavy smoking and lung cancer. Similarly, extreme degrees of overeating may be a manifestation of emotional decompensation.

Burwell[11] recently described a reversible pulmonary disorder associated with extreme obesity and continuous alveolar hypoventilation due to unusual elevation of the diaphragm and increased intra-abdominal pressure; breathing in this Pickwickian syndrome is carried on in a relatively extreme inspiratory phase.

Such a patient has a decreased vital capacity, low maximum breathing capacity, low arterial oxygen saturation and high carbon dioxide tension in the blood. As a result of this last factor, he is apt to fall asleep from carbon dioxide narcosis even while talking or eating or, as Dr. Burwell cited, even while holding a full house in a poker game!

Weight reduction encouraged by psychotherapy, diet, and dexedrine restores pulmonary function to normal and eliminates these annoying symptoms.

Serious Consequences

The association of emotionally induced hyperventilation and organic respiratory tract disease may have serious consequences. A patient with tracheal stenosis may be able to breathe normally without any discomfort, but should hyperventilation be induced for any reason, there will be considerable air trapping because of inability to generate enough pressure during expiration to force all the air out through the narrow opening between breaths.

Respiratory stridor soon becomes evident and the increased work of breathing may have serious consequences. Even after hyperventilation ceases, discomfort persists for 10-20 minutes because of overinflation of the lungs.

Similarly, patients with chronic bronchospasm often are comfortable until hyperventilation occurs, the most common causes being exercise or emotional excitement. These nonspecific factors seem to aggravate asthma in most patients with this disease.

Bronchial Asthma

Whether or not bronchial asthma can be induced by emotional factors alone has not been established. Some psychiatrists of the dynamic school think so. French and Alexander[12] made a careful psychiatric study in asthmatics and concluded that asthma developed during situations associated with separation from the mother figure.

Asthma was considered to be a suppressed cry — a protest against separation — that is to say symbolically, against securing oxygen independently by breathing. Flanders Dunbar[13] noted that

manic-depressive swings and narcissistic neuroses were especially frequent in asthmatics. However, I have not been impressed with the frequency of depressions in asthmatic patients.

Abramson[14] suggested that the maternal rejection theory is incomplete. He feels that before rejection there is mutual engulfment between parent and child.

The parent attempts to force the child to develop in a pattern representing the parent as he is or would like to be and as a result, the child is forced into a state of distorted dependency. When the child fails to meet the demands of the engulfing parent, the frustrated parent is enraged and threatens the child, who then feels rejected.

Four Areas

Miller and Baruch[15] indicate that there are four areas in the psyche of the asthmatic paitent: hunger for affection, fear of losing what affection he has, anger at the person from whom he wants additional affection, and anxiety over exposing this anger.

Grace and Graham[16] note that vasomotor rhinitis occurs when specific individuals face a situation with the wish that they didn't have to do anything about it or that it would go away, or that somebody else would take the responsibility. Asthma occurs in patients with similar but even more intense attitudes.

Wolf[17] finds nasal "reactors" to be essentially defensive, insecure, sensitive, dependent people who talk with difficulty about relevant personal matters and who seldom take positive steps to improve their state. A lively show of love and affection is a basic requirement and is readily accepted, but in turn they seem unable to give sympathy, warmth and support to others.

Wilson[18] suggests that the psychologic component in hay fever is based upon a displacement of sexual curiosity from the visual to the olfactory sphere. When psychologic stimulation is greatly increased by repressed sexual tension, this alone may produce an attack of rhinitis.

Intact Psyche

That an intact psyche is important in bronchial asthma was demonstrated by Funkenstein,[19] who found that asthmatic patients reacted with a characteristic asthmatic attack when exposed to standard amounts of irritating chemicals, but that these same individuals at other times during mental illness did not develop asthma when similarly stimulated. Asthma apparently is not a serious problem in mental hospitals!

Unfortunately, there has not been any report of a group of adequately studied and carefully followed asthmatic patients who have been treated exclusively by psychoanalytical techniques. Wilson treated 19 asthmatics with psychoanalysis and reported that nine became symptom free and eight were much improved with only two unchanged. The follow-up period was inadequate, however. He also reported[18] that patients with hay fever no longer had an attack when exposed to pollen following psychoanalysis.

In contrast to this concept, Wheeler, White, Reed and Cohen[20] indicated that in a group of 173 patients with anxiety neurosis who were followed for twenty years, there was no increased incidence of asthma and other so-called psychosomatic diseases which are supposed to be induced by anxiety. Also they indicated that psychoanalytical therapy was no more effective in controlling symptoms than was simple office reassurance.

89 Patients

We have begun a study on the course and prognosis of patients with bronchial asthma. In a group of 89 patients, nervous factors were recognized by the patient or examining physician as contributory to the asthmatic attacks in only 31 per cent.

Of the patients still living at the time of the follow-up study, nearly 80 per cent were either cured or better and indicated various factors that may have caused the improvement. In this group about one third volunteered the information that control of nervous tension was an important factor in their improvement.

The following are quoted from some of the follow-up summaries: "Asthma 75 per cent improved following moving to our own home where living conditions are much better and emotional strain much less"; "Asthma better because of better mental attitude"; "Asthma cured because of correction of tension due to not being adjusted to having a child"; "I think my asthma was a convenient sickness and when I didn't want to do something or wanted my own way, I just got an attack"; "Asthma cured by general physical improvement and relief of nervous tension"; "Asthma cured by entering own business where the responsibility is greater but the rewards are so much greater that they more than balance one another."

Common Knowledge

It is common knowledge that asthmatics respond to therapy much better in a hospital than at home where they are continually exposed to the emotional stresses that may have precipitated the attack. It is also well known that sedation (with due attention to the dangers of suppression of an already fatigued respiratory center) plays an important role in the therapy of bronchial asthma, partly to overcome the stimulating effects of sym-

pathomimetic medications, but also to allay anxieties inherent to any respiratory crisis.

Tranquilizing Drugs

The question of whether or not the new tranquilizing drugs have more than a nonspecific effect in pulmonary disease has not as yet been settled. Chlorpromazine has an anti-epinephrine effect, but probably only in dosage somewhat larger than that ordinarily used and therefore is not contraindicated in asthma and other allergic states.

Moyer[21] used chlorpromazine intravenously in acute asthma with apparent benefit. Other reports regarding use of these drugs in asthma are of a sketchy nature.

Meprobamate and rauwolfia and its derivatives have definite places in the control of anxiety and the hyperventilation syndrome. Rauwolfia has some limitations in this regard because in therapeutic doses it often causes nasal stuffiness, which forces mouth breathing, and this creates a sensation of dyspnea in some patients.

Rauwolfia may induce premature ventricular contractions which are very frightening to nervous patients. Also, at times, rauwolfia seems to have a depressing effect and this may cause respiratory symptoms to seem worse than they really are.

Summary

In summary, it may be stated that the emotions have just as profound an effect upon the respiratory system as they do upon the gastrointestinal tract, cardiovascular system, skin, joints or other parts of the body. These are manifest usually by nasal stuffiness and the symptom of dyspnea, with and without bronchial narrowing.

Control of these symptoms with pharmacotherapy is only partially successful. Attention to the psychic factors is essential, and elimination of emotionally disturbing situations or the development in patients of a better understanding of why they react the way they do will often be more rewarding than careful pulmonary function studies, skin tests or therapy directed by these studies alone.

Dr. Alsever Named Secretary Of Blood Bank Association

Dr. John B. Alsever of Phoenix, Arizona, General Medical Director of Southwest Blood Banks, with headquarters in Phoenix was elected secretary of the American Association of Blood Banks at its annual meeting in Chicago Nov. 4-6.

Southern New Mexico Clinical Meeting

Sponsored by the Eddy County Medical Society
Carlsbad, New Mexico

SATURDAY, DECEMBER 7, 1957

9:00 A.M.—Registration: Blount's Restaurant.

9:15-9:35—"Management of Burns." Rupert Pate, M.D., Carlsbad. George Markle, M.D., Carlsbad.

9:45-10:00—"Jaundice in the Newborn." Catherine Armstrong, M.D., Carlsbad.

10:00-10:45—"Complications of Labor & Delivery." Melvin Bivens, M.D., Albuquerque.

11:00-12:15 — Panel discussion: "Chest Pain." Moderator: Owen C. Taylor, M.D., Artesia. Members: Theodore Hauser, M.D., Carlsbad; Emmit Jennings, M.D., Roswell; James P. Sullivan, M.D., Carlsbad.

12:30-2:30—Luncheon followed by panel discussion on "Differential Diagnosis of Acute Abdominal Pain." Moderator: Al Haynes, M.D., Clovis. Members: Earl Flanagan, M.D., Carlsbad; Sol Heinemann, M.D., Carlsbad; J. W. Hillsman, M.D., Carlsbad; Ross Manganaro, M.D., Carlsbad.

2:45-3:30—Evaluation of "Newer Methods in Laboratory Diagnosis." L. O. Dutton, M.D., El Paso; J. A. Hancock, Ph.D., El Paso.

3:40-4:45—Panel Discussion: "Management of Low Back Pain." Moderator: C. Pardue Bunch, M.D., Artesia. Members: Melvin Bivens, M.D., Albuquerque; Sol Heinemann, M.D., Carlsbad; R. W. McIntire, M.D., Carlsbad; W. N. Worthington, M.D., Roswell.

7:30 P.M.—Dinner at the Silver Spur Restaurant. Speaker: Capt. J. D. Moseley, M.D., Holloman Air Force Base. Topic: "Space Flight & Human Tolerances to Mechanical Forces."

This meeting has been approved for a credit of 6 hours in Category I by the American Academy of General Practice.

The registration fee of $10.00 includes lunch and dinner. An additional $2.50 will be charged wives and other non-registrants attending the dinner. Please indicate your intentions on the enclosed card and drop in mail box.

MEETINGS

Report on the American Fracture Association Meeting in El Paso

The 18th annual meeting of the American Fracture Association held in El Paso, Sept. 30, Oct. 1st and 2nd, 1957, was very successful, and the attendance was larger than that of Chicago of last year even though Chicago is more centrally located.

Dr. Duncan McKeever of Houston gave a very excellent talk on "Mechanical Principles Involved in the Fixation of Fractures." He brought out the importance of cyclic stress and urged that grafts and areas be smoothed out and no sharp depressions be left which could cause failure of the fixation. He emphasized that at the fracture site there may be many small fracture lines not grossly visible and that fixation should extend well beyond the fracture site on each side.

Dr. William L. Waldrop of Oklahoma City gave a profusely illustrated talk. Dr. Waldrop stressed careful diagnosis, accurate reduction, careful soft tissue management of hand injuries. He showed many extensive hand injuries in which the adherence to principles in hand surgery had given very good results.

Dr. Roger Anderson of Seattle, spoke on "The Use of Transfixion in External Pin Fixation in the Treatment of Fractures." He brought out the principles of careful application of the pins, the use of a very strong non-breakable type of pin; careful sealing off of the skin wound to the pin and adequate and proper follow up studies.

Dr. I. William Nachlas of Baltimore, gave a most interesting paper about injuries to the cervical spine. He presented many cases of widespread symptoms varying from headache to pain in the neck and the upper extremity, pain in the chest by one patient who thought she had cancer of the breast, difficulty in moving the lower extremities.

Dr. Garrett Pipkin of Kansas City, at the program chairman's request presented an excellently arranged talk with beautiful illustrations concerning a subject in which he is expert namely fat embolism. He urged the careful transportation of fractures; careful observation of their hemoglobin and blood pressure; urine tests using a sizzle test which he very successfully demonstrated to determine fat in the urine. In all probability alcohol helps dissolve the fat emboli. Dr. Pipkin urged that fat embolism be treated before the obvious manifestations are present.

Dr. Louis W. Breck of El Paso presented a talk concerning hand fractures since one of the speakers was unable to be here because his mother was critically ill. Dr. Beck's presentation was excellent. He covered the standard treatment of fractures of the hand well and emphasized the problems involved.

Dr. Homer H. Stryker of Kalamazoo, Mich., opened the discussion period and thereby rounded up a program of very prominent speakers.

In the H. D. Junkin Memorial Lecture in honor of Dr. Junkin, one of the founders, Dr. Roger Anderson presented a very excellent program with the details of correct external pin utilization. This paper was formally discussed by Dr. Louis W. Breck who showed x-rays of a patient whose forearm fractures had failed to unite despite good fixation and later bone grafting. By the use of external pins over many months' time the radius united and then finally the ulna. All in all over a year passed with external pins in this case. The end result showed strong bone union and very satisfactory position of the bones for this serious bony and soft tissue injury case.

Dr. Franklin Lowe of San Francisco showed movies of extremely long period follow ups of patients following hip surgery and also he showed the use of casts in wedge correction for bow legs and knock knees. Patients were treated on an out patient basis.

Dr. Holland had worked for many months on a motion picture showing the effective use of external pin fixation in fractures and very ably demonstrated the correct application of this apparatus, which is all important if it is to be used successfully. Dr. Dana Street covered supplemental fixation of medullary nailing of the femur and brought out the effective use of added fixation for strength and Dr. W. Compere Basom of El Paso presented a method whereby the Hansen-Street nail could be used for "T" fractures and supracondylar fractures of the lower end of the femur by the use of threaded pins through threaded drill holes near the lower end of the nail.

Dr. Jekel Elected President of Southwestern Association

Dr. Louis G. Jekel of Phoenix was elected President of the Southwestern Medical Association at its 39th annual meeting in El Paso, October 9 through 11, 1957. Dr. Celso C. Stapp of El Paso was the retiring president.

Other new members elected were Dr. A. R. Clauser, Albuquerque, N. M., President-Elect; Dr. Wendell Peacock, Farmington, N. M., Vice-President; and Dr. Russell L. Deter, El Paso, Secretary-Treasurer. Named to the Executive Committee were Dr. H. D. Cogswell, Tucson; Dr. David Rusek, Chihuahua City; Dr. Merle Thomas, El Paso; Dr. Louis W. Breck, El Paso; and Dr. Celso C. Stapp, El Paso.

The 1958 convention will be held in Tucson, Arizona, October 9 through 11.

Dr. Louis G. Jekel

Speakers Listed

Speakers at the meeting were Dr. William Parson, Professor of Internal Medicine and Chairman of the Department of Medicine at the University of Virginia School of Medicine; Dr. Oscar Creech, Jr., Chairman of the Department of Surgery at Tulane University School of Medicine; Dr. E. E. Muirhead, Professor of Pathology at the University of Texas Southwestern Medical School at Dallas; Dr. Frederick C. Bost, Clinical Professor of Orthopaedic Surgery at the University of California School of Medicine; Dr. J. S. De Tar, Milan, Mich., Past President of the American Academy of General Practice; Dr. Robert A. Hingson, Professor of Anesthesia at Western Reserve University; Dr. Howard P. House, Professor of the Department of Otolaryngology at the University of Southern California School of Medicine; Dr. Phillips Thygeson, Clinical Professor of Ophthalmology at the University of California School of Medicine; Dr. Edward A. Banner, Assistant Professor of Obstetrics and Gynecology at Mayo Clinic; and Mac F. Cahal, Executive Secretary and General Counsel of the American Academy of General Practice.

Dr. Jekel, the new president, was born in St. Louis, Mo., and received his B.S. in Medical Science and M.D. from Washington University in St. Louis. He interned and took his residency in the Barnard Free Skin and Cancer Hospital and the Barnes Hospital in St. Louis. He entered into the private practice of medicine in Phoenix in 1938.

He is a member of the American College of Physicians, the American Academy of Dermatology and Syphilology, the Society for the Investigation of Dermatology, the Pacific Dermatological Association, and the Rocky Mountain Dermatological Society. He is a Past President of the Southwestern Dermatological Society and a former Vice-President of the Maricopa County Medical Society in Phoenix. He and Mrs. Jekel have a son and two daughters.

Held in conjunction with the Southwestern meeitng was the annual session of the New Mexico Academy of General Practice. New officers elected were Dr. J. A. Rivas, Belen, N. M., President; Dr. Wendell Peacock, Farmington, N. M., President-Elect; Dr. C. Pardue Bunch, Artesia, N. M., Vice-President; and Dr. Fred Brown, Roswell, N. M., Secretary-Treasurer.

Dr. Lewis Overton, Alburquerque, N. M., was elected President of the New Mexico Chapter of the Western Orthopaedic Association, which also held a meeting during the Southwestern convention. Other new officers of the Chapter are Dr. Louis W. Breck, El Paso, President-Elect; Dr. J. Bonitsky, Albuquerque, Secretary; and Dr. John Moore, Roswell, Treasurer. The next meeting of the Chapter will be held in Truth or Consequences January 11, 1958.

Southwestern Medical Association Meeting in El Paso, Texas, Oct. 9-11

NEW AND RETIRING OFFICERS—Left to right, back row, are Dr. John Dettweiler, Albuquerque, retiring member of the executive committee and a past president of the association; Dr. Merle D. Thomas, El Paso, member of the executive committee; Dr. Louis G. Jekel, Phoenix, new president; Dr. Russell L. Deter, El Paso, re-elected secretary-treasurer; Dr. Louis W. Breck, El Paso, executive committee and managing editor of Southwestern Medicine; front row, Dr. H. D. Cogswell, Tucson, executive committee; Dr. A. R. Clauser, Albuquerque, president-elect; Dr. Celso C. Stapp, El Paso, retiring president and member of the executive committee; and Dr. Wendell Peacock, Farmington, N. M., vice-president.

At an anesthesiology luncheon during the meeting were left to right, back row, are Dr. Frank O. Barrett, El Paso, Dr. J. A. Shugart, El Paso, Dr. J. C. Dotson, El Paso, Dr. James J. Gorman, El Paso, Dr. Philip M. Prieto, El Paso, and Dr. Robert E. Haan, El Paso. Front row, Capt. Francis R. Applegate, William Beaumont Army Hospital, Lt. Col. Marshall D. Jackson, William Beaumont Army Hospital, Dr. O. G. Zacharias, El Paso, Dr. Alfred Sorensen, El Paso, Dr. Merle D. Thomas, El Paso, and Dr. Robert W. Hingson, Professor of Anesthesia, Western Reserve University, one of the guest speakers.

At a luncheon meeting of the New Mexico Chapter of the American Academy of General Practice during the Southwestern meeting were the following (left to right): Dr. W. J. Hossley, Deming, retiring president of the chapter, Dr. Earl L. Malone, Roswell, Dr. Harry W. Sellers, Fort Bayard, Dr. Edwin Walker, San Carlos, Ariz., Dr. T. W. Williams, Haskell, Texas, Dr. Oscar Creech, Jr., Professor of Surgery and Chairman of the Department of Surgery at Tulane University School of Medicine, who was one of the guest speakers, Dr. Leland S. Evans, Las Cruces, Dr. Steve Marshall, Roswell, Dr. H. O. Lehman, Portales, Dr. J. A. Rivas, Belen, new president, Dr. J. J. Johnson, Jr., Las Vegas, Dr. Junius Evans, Las Vegas, Dr. David L. Greenlees, Odessa, Tex., and Dr. John H. Scott, Truth or Consequences, N. M.

Comparing notes on the Southwestern program are Dr. Cecil A. Robinson of Kermit, Tex., and Dr. Jack D. Reedy, Pecos, Tex.

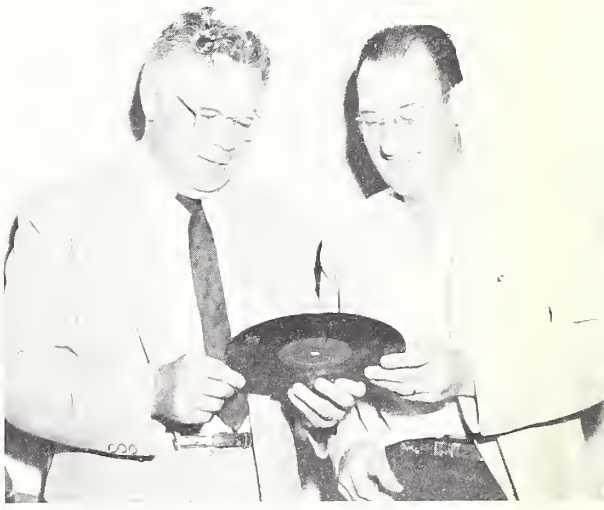
Dr. Frederick C. Bost of San Francisco, guest speaker and president of the American Academy of Orthopaedic Surgeons, (left) chats with Dr. Myron G. Rosenbaum, Albuquerque, president of the New Mexico Orthopaedic Association.

At an EENT luncheon at the Southwestern meeting clockwise around the table from the foreground are Capt. Donald L. Browning, William Beaumont Army Hospital, Capt. Walter B. Eidbo, William Beaumont, Dr. Robert N. Caylor, El Paso, Dr. W. G. Morrow, Jr., El Paso, Dr. G. M. Wallace, Lubbock, Dr. Charles Elsberg, El Paso, Dr. Clay Gwinn, Carlsbad, Dr. William D. Radcliffe, Belen, N. M., and Dr. Otto Gambacorte, Tucson.

Dr. Eugene H. Chapman and Dr. Ward Studt, h of the Carrie Tingley Hospital for Crippled ildren at Truth or Consequences, N. M.

At the registration table, left to right, are Mrs. H. D. Garrett, president of the El Paso County Medical Society Auxiliary, Mrs. Leigh Wilcox of the El Paso Auxiliary, Mrs. Evelyn Drennan of El Paso, Dr. H. D. Garrett, El Paso, Dr. and Mrs. F. G. Evans and (standing) Dr. James J. Gorman and Dr. Wickliffe Curtis, both of El Paso.

At the EENT luncheon are, left to right, Dr. Frank P. Schuster, El Paso, Dr. Howard P. House, Professor of the Department of Otolaryngology at the University of Southern California School of Medicine and guest speaker, Dr. W. E. Vandevere, El Paso, Dr. Sherwood Burr, Tucson, Capt. James H. Brandenburg, William Beaumont Army Hospital, Capt. Donald L. Browning, William Beaumont, (foreground) Dr. Phillips Thygeson, Clinical Professor of Ophthalmology at the University of California School of Medicine and guest speaker, and Dr. John D. Martin, El Paso.

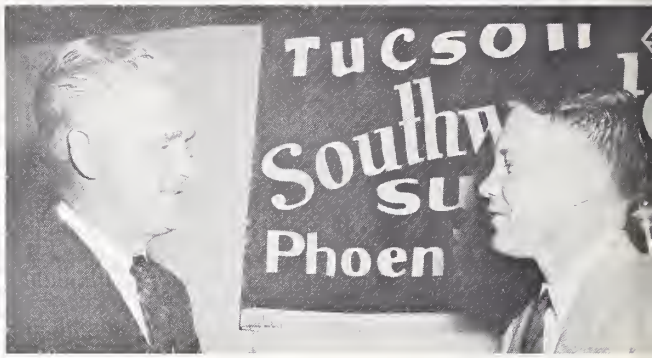


Dr. H. D. Pate and Dr. R. W. McIntire, both of Carlsbad.

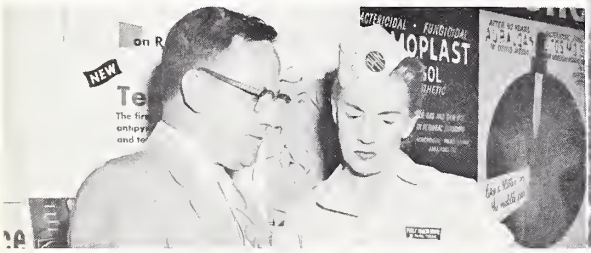
Above, officials of the New Mexico Medical Society held a constitution and by-laws committee meeting during the Southwestern convention and, left to right, they are Dr. James C. Sedgwick, Las Cruces, N. M., president-elect of the New Mexico Medical Society, Dr. Stuart W. Adler, Albuquerque, past president of the Society, Dr. E. H. Dellinger, Las Vegas, N. M., Dr. C. Pardue Bunch, Artesia, N. M., committee chairman, Dr. Samuel R. Ziegler, Espanola, president of the Society, Ralph Marshall, Albuquerque, executive secretary, and Dr. Warren Hall, Silver City. On the right, doctors join El Pasoans in the lobby of the Hotel Paso del Norte to watch the world series.

Left to right above are Dr. George C. Anison, Albuquerque, Dr. James S. Walsh, Douglas, Ariz., Dr. C. M. Stanfill, El Paso, Dr. John D. Martin, El Paso, and Dr. Phillips Thygeson, guest speaker. On the right are Dr. A. E. Luckett, El Paso, (left) and Dr. H. O. Lehman, Portales, N. M.

Bud Hyer, El Paso, of Winthrop Laboratories demonstrates an item to Miss Sylvia Anderson, Public Health nurse for the city of El Paso, while Ron Bishop of Denver, Winthrop, looks on.



Dr. Steve Marshall of Roswell and Stuart Hutson, El Paso, Southwestern Surgical Supply.



William M. Coulter, El Paso, Mead Johnson and Co., and Mrs. Astrid Keck, El Paso Public Health nurse.

Dr. J. Bronitsky, Albuquerque, visits with Mr. and Mrs. R. C. Miller, Ethical Pharmacal Co. of San Antonio.

Exhibitors at the meeting lunching together are, left to right, H. N. "Wally" Walsdorf, San Antonio, Mission Pharmacal Co., Tom Gorman, El Paso, Parke, Davis and Co., Billy Moore, El Paso, Upjohn, H. A. DuBose, El Paso, E. R. Squibb and Sons, Leroy Koepp, El Paso, Squibb, Dick Carruthers, Albuquerque, William S. Merrell Co., Wayne Hales, Denver, G. D. Searle and Co., and Stan Kasprzytcki, San Gabriel, Calif., Desitin Chemical Co.

CURRENT THERAPY

Aralen in Rheumatoid Arthritis

By Jack A. Bernard, M.D., *El Paso*

Recent newspaper accounts with subsequent patient inquiries of chloroquine in rheumatoid arthritis warrants its discussion in this month's column.

For several years the antimalarial drugs have been used in the treatment of lupus erythematosus. See Current Therapy: Southwestern Medicine: September 1955: Dr. H. D. Garrett, "The Newest Treatment of Lupus Erythematosus from the Dermatologist's Viewpoint". In the course of such studies it was noted that the joint symptoms in some patients were improved, so it was a logical step to try these drugs in patients with rheumatoid arthritis.

The mechanism by which the drugs produce their effect is not known. There is no primary analgesic action. The process of improvement is a slow one and there is a latent period of action of a month or more.

Chloroquine Substituted

At first Quinacrine (Atabrine) was used but because of its toxicity, particularly the discoloration of the skin, chloroquine (Aralen) was substituted. There have been various reports as to its benefits.

Of course, in a disease such as rheumatoid arthritis, with so many exacerbations and remissions, it is indeed difficult to determine the true effect of the drug. However, it certainly seems to be of some benefit in many cases and makes the patient feel better and look better, with little toxic effects reported.

Various dosages have been tried but Winthrop Laboratories, in view of Bagnall's work, recommends a dosage of 250 mg. daily as a single dose at the evening meal.

Persistence of treatment is very important and at least three months or more should be tried before stopping treatment.

Dermatitis Reported

As to toxicity, dermatitis was reported in about 40 per cent of the patients. Leukopenia may occur but agranulocytosis has not yet been reported. The leukopenia reversed on discontinuance of therapy. Gastro-intestinal disturbances and temporary blurring of vision may occur.

If side effects do occur with Aralen, hyderoxychloroquine (Plaquenil) may be substituted. Dosage is 400-600 mg. daily with the usual maintenance dose of 200-400 mg. daily.

Open To Question

Finally, it is realized that the absolute effectiveness of Aralen in rheumatoid arthritis is open to some question but the same statement can be made of gold therapy, which has been used for over twenty-five years now; the lower toxicity of Aralen would favor its usage. At any rate, for those who treat such a difficult and trying disease as rheumatoid arthritis and who have tried all the various remedies, here is another drug that has shown to be of some value in some cases and its trial would certainly seem justified. Dosage is 250 mg. daily as a single dose at the evening meal.

New Mexico Improves Prepaid Medical Care

An increasing concern over the ability of many patients to pay for surgery or hospitalized medical care was one of the reasons for the recent revision of New Mexico Physicians' Service, Dr. W. H. Peacock, its president, reported.

"We see too many patients whose insurance is inadequate. They bought cheap protection and got what they paid for. Unfortunately, many don't find this out until it is too late," Dr. Peacock stated.

He added that the New Mexico Medical Society's plan, being relatively free of restrictions, with surgical and medical schedules that are about 50 per cent higher than previously, is not cheap, but it is the best protection that the Board of Trustees has been able to work out for patients in the lower middle income bracket.

The policies of the New Mexico Physicians' Service are determined by a committee of fifteen physicians, elected by the State Medical Society, who also supervise its operation by approved insurance companies.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

October 17, 1957

FREDERICK P. BORNSTEIN, M.D., EDITOR — Case No. 897

Presentation of case by Dr. J. J. Hornisher

History—Dr. Nathan Kleban:

A 24-year-old married Latin-American housewife entered this hospital because of weakness of the right arm and leg on May 30, 1957 and died on August 9, 1957.

The patient had suffered no unusual serious illnesses at any time and denied knowledge of having had scarlet or rheumatic fever. Following an incident of sexual intercourse with a cousin at 14, which was her age of menarche, the patient felt guilt and shame and went out of the house only with her mother and sister.

An engagement arranged by her sister's boy friend terminated after three months in marriage at 21. There followed two uneventful pregnancies and deliveries. Her third pregnancy ended in an abortion in August, 1955 with the fetus estimated to be of one month gestation.

When pregnant about two months for the fourth time, her older child, who was 21 months of age, became ill and convulsed. The patient lost consciousness suddenly as she was holding the baby in her arms. Several hours later her mother found her lying across her little girl's lifeless body. Exactly how long she was unconscious she did not know.

Her mother thought she had bit her tongue. When the infant was buried the patient fainted. There was neither aura nor incontinence. Despite an autopsy finding of bronchopneumonia as cause of death, the patient remained convinced that she had killed her child by asphyxiation.

In November 1956 the patient entered the hospital in false labor with a mild toxemia of pregnancy. She had severe irregular uterine contractions. While being weighed one morning she had a syncopal attack, sustained no head injury.

Because of suspected convulsive seizures a medical consultant saw the patient, found a mild preeclampsia, a soft systolic murmur which he was unable to localize at any valve area, no abnormal neurological signs, suggested that an EEG be obtained later.

On the tenth day true labor began. There was an uneventful vaginal delivery using a pudendal procaine block about one hour after the amniotic sac was ruptured by the attending obstetrician. The placenta was delivered manually one hour later.

An estimated 1500 cc. blood loss occurred. One unit of whole blood was started six and one-half hours after the delivery of the infant and a second unit was given five days later. The patient otherwise had an uneventful puerperal course. The baby later died of small intestinal atresia.

On May 12, 1957, about five and one-half months later, while washing clothes, the patient noted a severe frontal headache, dim vision, drowsiness and a sensation of body warmth. This continued until May 20 when her right extremities became numb and paralyzed. On admission, right hemiplegia, a right Babinski, absent abdominal superficial reflexes, and blood pressures of 152/104, 124/80, 124/78 and 140/90 were observed. The next morning the patient was able to walk and was discharged to be studied as an out-patient.

On May 30 the patient was again admitted with unchanged right hemiparesis. The admission note stated that the patient had had convulsions, but these were not further described.

The past history was not otherwise remarkable.

There was a question of the patient's father having had hypertension and of a brother having had a convulsive seizure.

Physical Examination

Temperature 98.6. Pulse 76, regular. Respirations 20, regular. Blood pressure 130/75. There was spastic paresis of the right extremities. A right Babinski and bilateral Hoffman signs were elicited. A Grade I-II systolic murmur was heard over the mitral and tricuspid valve areas. Sensory and cranial nerve examinations were within normal limits.

Hospital Course

A lumbar puncture was done on the day after admission. Opening pressure was equivalent to 215 m.m. of water. A neurology consultant found a hemiplegic gait, right Babinski, increased right deep tendon reflexes, thought there had been a cerebral vascular accident and recommended "neuro-surgical consultation for further diagnostic procedures to eliminate tumor."

A cardiac consultant found clubbing and a continuous murmur in the pulmonic area and

thought the patient had a patent ductus arteriosus, sub-acute bacterial endarteritis and cerebral embolization. Seventeen blood cultures were obtained, then 600,000 units of aqueous penicillin was given I.M. every four hours from June 14 to July 25.

When the blood pressure was 120/78 an I.M. Regitine test was done with little effect on blood pressure but the production of a severe headache.

On June 21 a pneumo-encephalogram was done. Pressure was said to be normal.

The patient was free of fever except after the neurosurgical diagnostic procedure and about the last two weeks.

On June 19 the nurses' notes recorded an "apparent grand mal seizure." The patient complained increasingly of headache. Incoherent and difficult speech were noted on July 5. On July 9 there were involuntary contractions of muscles of the face and arms.

Nausea and vomiting appeared. Spinal fluid pressure on July 16 was the equivalent of 592 m.m. of water. On July 24 the neurosurgical consultant observed swelling of the right optic nerve head, hemorrhage of the left retina. On August 1 the cardiac consultant believed that the patient had a brain abscess. Dilantin, penicillin and streptomycin were given for the last several weeks.

Lethargy, stupor and coma terminated in central respiratory failure, shock, pulmonary edema and death on August 9, 1957.

Laboratory Findings

Blood counts: May 31—Hb. 10.3 gms., Ht. 36%, WBC 6,500, Segs. 68, Lymphs. 24, Monos. 3, Eosin. 4. June 7—Hb. 1 gms., Ht. 41%, WBC 4,700, 40 Segs., 34 Lymphs, 2 Monos, 3 Eosin. June 20—Hb. 11.1 gms., Ht. 39%, WBC 9,350, Segs. 75, Lymphs. 22, Monos. 1, Stabs. 2. July 12—Hb. 13.5 gms., Ht. 43%, WBC 8,300, Segs. 67, Lymphs. 33. July 15—Hb. 11 gms., Ht. 42%, Segs. 68, Lymphs. 30, Eosin. 2, WBC 7,800.

Blood chemistry: May 31—Urea nitrogen—10.7 mg%. Blood sugar—91 mg%.

Serology: May 31—Negative.

Urinalysis: June 3—S.G. 1.015, alkaline, sugar and albumin negative, 0-6 WBC, 1+ Ep. cells. June 17—S.G. 1.030, acid, sugar and albumin negative, 4-6 WBC, Ep. cells 3+, 2+ Calc. Ox. Aug. 2—S.G. 1.016, many WBC, many RBC, trace of albumin and trace of sugar, motile packed bacteria.

Sedimentation rate: August 5—4 mm.

Spinal fluid: June 1—Total protein 18.0 mg.%, WBC, 0, Polys 0, Lymph. 0, Sugar 58 mg.%. July 15—Total protein 16.5 mg.%, Lymph. 6, WBC 6, Polys 0, Sugar 77 mg.%.

X-rays: July 22—Skull X-rays: Skull negative for evidence of depressed fracture or increased intracranial pressure. June 21—Pneumo-encephalogram—Negative for evidence of space-taking lesion.

May 31, 1957—Skull and chest: "Healthy chest. No evidence of congestive failure or cardiac enlargement. Skull negative for evidence of depressed fracture or increased intracranial pressure. Air studies are recommended for further evaluation".

Electrocardiograms—May 31—"Normal." June 25—"Possible lateral myocardial damage. Suggest repeat records with additional leads V-7 and V-8 and leads above and below V-5 and V-6".

Electroencephalogram June 3, 1957: "This record shows frequent seizure discharges with left hemisphere localization especially left temporal. It is apparent that we are dealing here with a temporal lobe epilepsy which is of such proportion that it would be expected to show up also on air studies. Bipolar studies and monopolar studies confirm this localization but it is not limited to the temporal lobe left".

X-Ray Discussion—Dr. Fred W. Seymour

On the skull, the first examination was primarily done to rule out fracture. It showed no evidence of brain pathology. Later an air study was done.

I don't believe there is quite as much air as I like to see. However, both horns showed up firm and well and while there may be a questionable difference in size on the two sides, the difference between the two is not of diagnostic significance.

About two years ago there was a report from Michigan on air studies in brain tumors. They found that approximately 65 per cent of the cases could be diagnosed by neurological findings. About 20 per cent of the cases could be picked up on a flat film of the skull.

In approximately 65 per cent of those that had tumors diagnosed by encephalograms, the tumor was above the tentorium. With the ventriculograms, tumors below the tentorium were diagnosed in approximately 80 per cent of the cases, but it is to be remembered that that was a particularly selected group of cases where there was reason to make such an investigation.

Cerebral arteriograms again were close to 80 per cent in their accuracy because of the type of case that was studied by that means. We have nothing here to show a space-taking lesion, which leaves it up to somebody else to come up with some helpful information.

Clinical Discussion—Dr. J. J. Hornisher

Eighty per cent of all brain lesions can be diagnosed by good histories. We are a bit handicapped here with the history. The history as I received it at the time of the EEG was that this

woman was in the hospital because she had fallen on her baby, the baby was found dead. This made the newspapers and she was brought to the hospital.

I never did see this patient, I just saw the electroencephalogram and had the impression that she had something really very serious in the left frontal lobe, all the way down through the left temporal lobe. Let's just go through some of the record again, which is very well prepared by Dr. Kleban.

In Good Health

"She suffered no unusual serious illness and was in good health. She was sorry about the relations with her cousin." I would not attach any significance to that except a judgment defect but it hardly could be associated with a condition ten years later.

There were uneventful pregnancies, the third pregnancy ended in an abortion, that's in 1955, and these are things that could happen to anyone and we really haven't come across anything that is of significance.

When she was pregnant about two months for the fourth time, about February of 1956, there is some history of fainting and possibly a history of a convulsive disorder. I see nothing of significance yet that we can tie up to it.

We often come across people at autopsy with brain tumors that had none of these symptoms.

Syncopal Attack

In November, 1956 the patient entered the hospital in false labor and mild toxemia of pregnancy, had severe irregular uterine contractions, and while being weighed one morning she had a syncopal attack.

Now that is probably the first fainting spell that she had.

There was no head injury. At that time there is reference to a systolic murmur, she probably had some sort of heart condition, but no EKG was done at that time. On the tenth day after labor there was an uneventful delivery.

'May 12, 1957, about five and one-half months later, while washing clothes, the patient noted a severe frontal headache, dim vision, drowsiness and a sensation of body warmth.

Numb Extremities

This continued until May 20 when her right extremities became numb and paralyzed. On admission right hemiplegia, a right Babinski, absent abdominal superficial reflexes, and blood pressures of 152/104, 124/80, 124/78 and 140/90 were observed.

The next morning the patient was able to walk and was discharged to be studied as an outpatient. On May 30 the patient was again admitted with unchanged right hemiparesis.

The admission note stated that the patient had had convulsions, but these were not further described." Convulsions, paralysis and pyramidal tract signs were mentioned.

Physical Examination: Temperature 98.6. Pulse 76, regular. Respirations 20, regular. Blood pressure 130/75. There was spastic paresis of the right extremities.

A right Babinski and bilateral Hoffman signs were elicited. A Grade I-II systolic murmur was heard over the mitral and tricuspid valve areas. Sensory and cranial nerve examinations were within normal limits.

I would wonder if she didn't have a seventh nerve paralysis from the hemiplegia as described here, she also must have had some kind of facial involvement but that's passed over, she probably had some difficulty swallowing.

Then there was a cardiac consultation which indicated that she probably had a ductus arteriosus, there was a suspicion of a subacute bacterial endocarditis, with a cerebral embolism.

She had 17 blood cultures, all normal, and enough penicillin certainly to take care of any infection. The blood pressure was 120/78, she had a Regitine test done and all it produced was a severe headache.

Electroencephalogram

On the third day after this admission she had an electroencephalogram. The record showed frequent seizure discharges with left hemisphere localization, especially left temporal.

I wrote in "it is apparent that we are dealing here with left temporal lobe epilepsy which is of such proportion that it would be expected also to show on air studies."

Bipolar studies and monopolar studies confirm this localization but it is not limited to temporal lobe on the left side indicating that it was a rather extensive thing, that the seizure discharges were coming from the temporal lobe, but it is possible that other areas were so extensively destroyed that the seizure discharges were not coming from there.

Could this be a cerebral vascular accident? A cerebral vascular accident is sudden in onset and does not progress. A tumor rarely is sudden in onset, unless there is hemorrhage into the tumor.

If the patient in addition has abnormal discs and choking from increased intracranial pressure, it is more difficult, but if the cerebro-spinal fluid is bloody immediately after the symptoms it would point toward an intracerebral hemorrhage.

This fluid was clear and normal. Now failure to establish the diagnosis before operation is not serious or very important because operative treatment is indicated even in such cerebral vascular accidents. Protein examination is important but this one was normal.

If the protein is, say from 50 to 75, we would look for cerebral vascular accidents, but as a rule tumors run over a hundred.

Grand Mal Seizure

On June 19 the nurses' notes recorded an apparent grand mal seizure. The patient complained increasingly of headache. Incoherent and difficult speech were noted on July 5. On July 9 there were involuntary contractions of muscles of the face and arms.

Nausea and vomiting appeared. Spinal fluid pressure on July 16 was the equivalent of 592 m.m. of water. On July 24 the neurosurgical consultant observed swelling of the right optic nerve head, hemorrhage of the left retina. On August 1 the cardiac consultant believed that the patient had a brain abscess. Dilantin, Penicillin and Streptomycin were given during the last several weeks.

A brain abscess is something to be considered here because there were other reasons to suspect that the patient had emboli. A brain abscess would indicate a very rapid increase in size, therefore the patient ought to have choked discs and should have had it early.

She hardly could have developed a brain abscess with a treatment of 600,000 units of Penicillin every four hours. The third and sixth cranial nerves can hardly escape a brain abscess because there is such a generalized pressure and there ought to be a wealth of neurological evidence in a brain abscess.

The cell count is directly related to the stage of encapsulation and its nearness to the surface. In early encapsulation of an abscess near the ventricle or near the sub-arachnoid spaces the cell count is elevated. It may be up high, up to say 50,000.

The better the abscess is encapsulated, the better it is walled off, the lower the count. If the abscess is developing the white count should increase, if the abscess is localized the count would go down.

But the constant zero count would eliminate the possibility of an abscess. Now again proteins vary in abscess, protein in an abscess say runs 45 to 200 in 75 per cent of the cases. The colloidal gold usually shows a meningitis type of a curve in abscess or it may be a paretic type of curve with a 5554321.

If the sugar is under 40-45 we can feel that bacteria have also gotten into the spinal fluid. So as far as the possibility of this being an abscess, it doesn't fit the clinical picture.

There are some laboratory findings which suggest a mild anemia but no infection, the white count was always 5000, 4000. Serology is negative. The gold curve throws us off the track with zero, zero, zero all along the line, but gives us some information, that we are not suspecting an abscess.

I thought she had a terrific process which should show up on air studies.

It is possible that an early lesion with great electrical disturbances be without anatomical dislocation. Accepting then the air studies as normal puts us off the track again.

I assume that we are dealing here with a rapidly progressive space-occupying lesion. While in the first part of the picture there is no change in the size of the lesion, soon we see that spinal fluid pressure has doubled and certainly by that time there would be abnormal findings in the ventricles and protein but those studies were not made at a later date.

I would feel that this is a rapidly progressive process but not quite like an abscess. The electrical activity coming from the temporal lobe would be the only active area that is left from which we receive some information so that the greater defect in this individual would be above the temporal lobe, therefore in the frontal lobe. The rest of the picture suggests a rapidly progressing glioma of probably a few months duration.

The electroencephalogram shows a defect in the left hemisphere, worse in the temporal lobe, comparing the left temporal against the right temporal. The right temporal lobe is pretty good. The left temporal lesion produces seizure discharges and the convulsions suggest a tumor type activity in the entire left hemisphere except the posterior portion.

In summary, my diagnosis would be a rapidly enlarging tumor, probably glioma with hemorrhage in the left temporal and frontal lobes. The tumor is probably of a few months duration.

Dr. W. P. Stratemeyer

What impressed be about that girl, and we were really in the dark about her, was the rapid progression of the disease and the fast deterioration of this girl. She arrived with a mild right hemiparesis and within a few weeks or a month or so it became very severe, her right arm was drawn up, one couldn't bend it at all.

On the 24th of July we noted very severe swelling of both optic discs. The left one was covered with much hemorrhage.

She had severe papiledema on both sides at that

time. It is not mentioned here but I believe in June she didn't have any papiledema at all. When the pneumoencephalogram was normal we really thought that there was no space-occupying lesion there.

I didn't see her after that until maybe a month later and I was aghast at the way the girl had deteriorated. Then, seeing that papiledema, we were pretty sure she had a space-occupying lesion but didn't know where.

Before we could get on to do anything, she died. We didn't think she had a tumor until we came back and saw that papiledema. I think she had a tumor but I don't know where.

Dr. J. E. Stern

I think it is a very interesting and instructive case, well presented. Retrospectively it is relatively easy for us to say the patient had a space- occupying lesion, probably a tumor, and that the development of the symptoms and signs easily bears that out.

I get the impression on reading the protocol that the clinicians were thinking from the beginning in terms of a cardiac lesion, either a congenital or rheumatic, and that they were thinking in terms of embolization with infarction of the brain and paralysis on the opposite side of the body.

Speaking only from the standpoint of the electroencephalogram I would like to say again that serial electroencephalograms in this case would have been exceedingly valuable because the electrical changes produced by infarction usually involute very rapidly, while the electrographic changes especially tumor and to perhaps a lesser extent abscess, progress inevitably until either decompression is done or the patient dies.

I think in this case, although the clinicians may have had a pretty firm idea about embolization and brain infarction, it would have been modified completely if they had had serial tracings because without any doubt this tracing would not have improved and would probably have gotten worse, whereas an infarction would have cleared up rather rapidly.

Dr. Jack Postlewaite

I believe in this case that we are missing the diagnosis altogether. You have a patient here who doesn't conform to the inflammatory lesion. I don't believe you will ever find a normal spinal fluid in an inflammatory lesion of the brain.

If you find a normal cell count you won't find a normal protein, and our proteins are unreliable but not that unreliable. Normal spinal fluid pressures until the terminal event has a significant mention here.

Hemorrhage into the tumor is a good possibility,

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but there is another space-occupying lesion that a person with multiple congenital lesions would have which ends up with terminal epilepsy and ultimately shows an encephalopathy picture.

I think this patient may turn into some sort of congenital lesion of the brain which does not show on the previous air studies and which would have shown could it have been done at the time she hemorrhaged into this lesion, or the lesion was vascular to begin with.

An aneurysm of the brain is the most common lesion in a young person and it may not become symptomatic until they are adult, with a mild eclampsia or with childbirth or a basketball game.

I have had two of these cases, therefore I think we could make such a diagnosis as an aneurysm which finally burst that dilated to the point to become symptomatic.

We may have had a lesion we could have treated surgically such as ligation or intracranial therapy. I don't believe another congenital lesion would do this; for example a cyst of the brain should have shown as a space-occupying lesion.

I have asked the question whether this encephalogram might be abnormal because of an absence of the cortex in this area rather than the presence of the vascular or space-occupying lesion. Then it occured to me are all our findings unilateral? She had a bilateral Hoffman.

Does a bilateral Hoffman mean bilateral disease or would there be a brain stem lesion or one near the aqueducts causing acute ventricular dilatation?

Multiple congenital lesions don't exclude the central nervous system, and I am inclined to believe the observation of clubbing of the fingers and something suggestive of a patent ductus arteriosus would lead us to believe that a third congenital lesion was possible.

I wonder if we ever see a neoplastic disease of the central nervous system without something in the spinal fluid, no matter how deeply the neoplasm is located, such as protein cells or some other alteration.

Dr. Nathan Kleban

The reason her past history was given was that at the time when she was in false labor it was felt that this girl had gone through a period of severe psychic trauma.

Even after she was admitted with hemiparesis there apparently was some question in the minds of the house officers who saw her as to a hysterical conversion reaction, and I presume that was when he was obtaining the history and before he did the physical examination.

Exactly when this process started of course is an interesting question and we don't know whether the syncopal attacks that she had, and she had three before the disease became more severe and progressive, were related to the disease which killed her.

There certainly was a time despite the nature of the lesion when this was a curable disease and this patient was being seen in this hospital before her symptoms became very severe.

I was the individual who saw her at her fourth delivery and it was Dr. Baca who asked me to see her because there was a question of convulsions.

It was never clear whether she had actually pure syncopal attacks or whether she had convulsive seizures. Whether there was any relationship between the difficult labor she had and this disease is a question too.

I put in here the fact that she had severe bleeding with the fourth delivery and her having one pint of blood six and one-half hours later and the second pint five days later because of the question of possible brain damage.

Dr. E. S. Crossett:

I would like to ask a question. This woman had a congenital heart which caused her to have an acyanotic type of heart disease.

She should not have had clubbing of the fingers from this type of heart disease necessarily so that the clubbing of the fingers would suggest that the patient had an endocarditis.

Now the idea that this was an embolus or an infection has been discounted by all the neurological consultants. I wounder if it could be possible or could it fit the picture that an embolus occurred which did not produce a space-occupying lesion or sign of infection such as high protein and so on initially but which subsequently caused a brain abscess to develop or some necrosis in the brain with cyst formation and a space-occupying lesion.

Could you discount this? This woman did have pretty good evidence of a sub-acute bacterial endocarditis.

Dr. F. P. Bornstein

If I may answer part of the question—the septic embolus, by producing a subsequent infection and an abscess can produce a space-occupying lesion. A bland embolus with hemorrhagic infarction will produce a small amount of edema but from then on the lesion with phagocytic activity and even with cyst formation, will be a shrinking lesion. Only if you have the superimposed element of infection will you get a space-occupying lesion on an embolic base.

Clinical Diagnosis: 1. Sub-acute bacterial endocarditis with emboli. 2. Possible space-occupying lesion of the brain.

Dr. Hornisher's Diagnosis: Rapidly enlarging tumor, probably glioma, with hemorrhage in the left temporal and frontal lobes.

Pathological Diagnosis: Oligodendroglioma, left frontal lobe, with hemorrhage.

Pathological Discussion—Dr. F. P. Bornstein:

On autopsy we found a slender 25 year old woman. In the chest and abdomen the only pertinent findings concerned the heart, which showed a typical mitral insufficiency.

The brain weighed 1200 grams and was markedly edematous. The gyri of the brain were widened and flattened out. Upon inspection of the brain, bulging was noticed at the medial surface of the left frontal lobe.

In this area the gray substance showed petechial hemorrhages. Upon making a coronal section through the left hemisphere a hemorrhagic mass measuring about six cm. greatest diameter and about oval in shape was located in the left frontal lobe about two cm. below the cortex. (Fig. 1)

Figure 1

The hemorrhage and tumor both extended medially across the corpus callosum from the left into the right hemisphere. In addition the tumor extended posteriorly through the parietal to the margin of the left occipital lobe.

On microscopic examination there was a cellular gliomatous tumor found which had two characteristic features. Firstly, many of the cells were rather large and were surrounded by a light halo

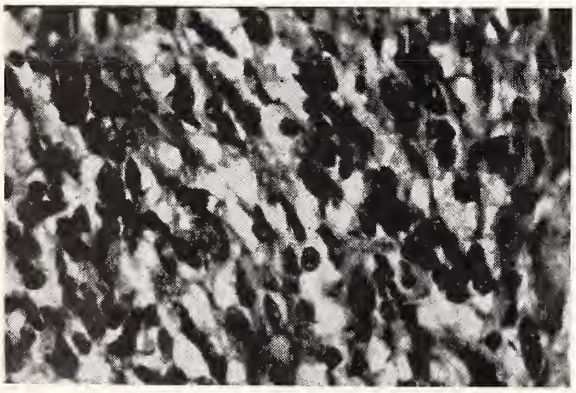

Figure 2

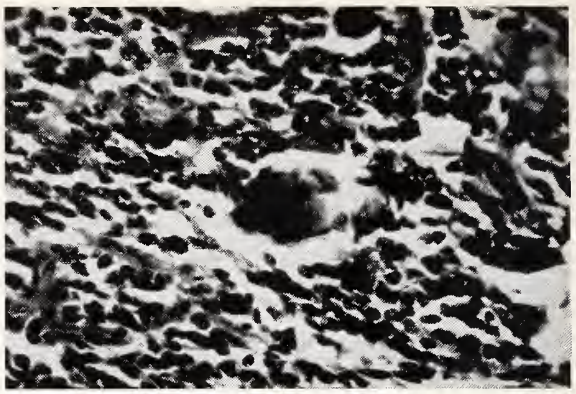

Figure 3

(Fig. 2) Secondly, numerous calcified bodies were present throughout the tumor (Fig. 3).

In view of these observations, the tumor was classified as an oligodendroglioma. The clinical history fits that of an oligodendroglioma. These tumors occur in fairly young people. They grow rather slowly and are preferably located in the cerebral hemispheres.

I am convinced the tumor progressed rather slowly and that the early syncopal attacks were part of the clinical picture. The rapid deterioration occurred when the tumor became hemorrhagic, rapidly increased in volume and produced all the signs of an acute space-occuying lesion.

X75-1448

Southwestern medicine.
v.38, 1957.

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